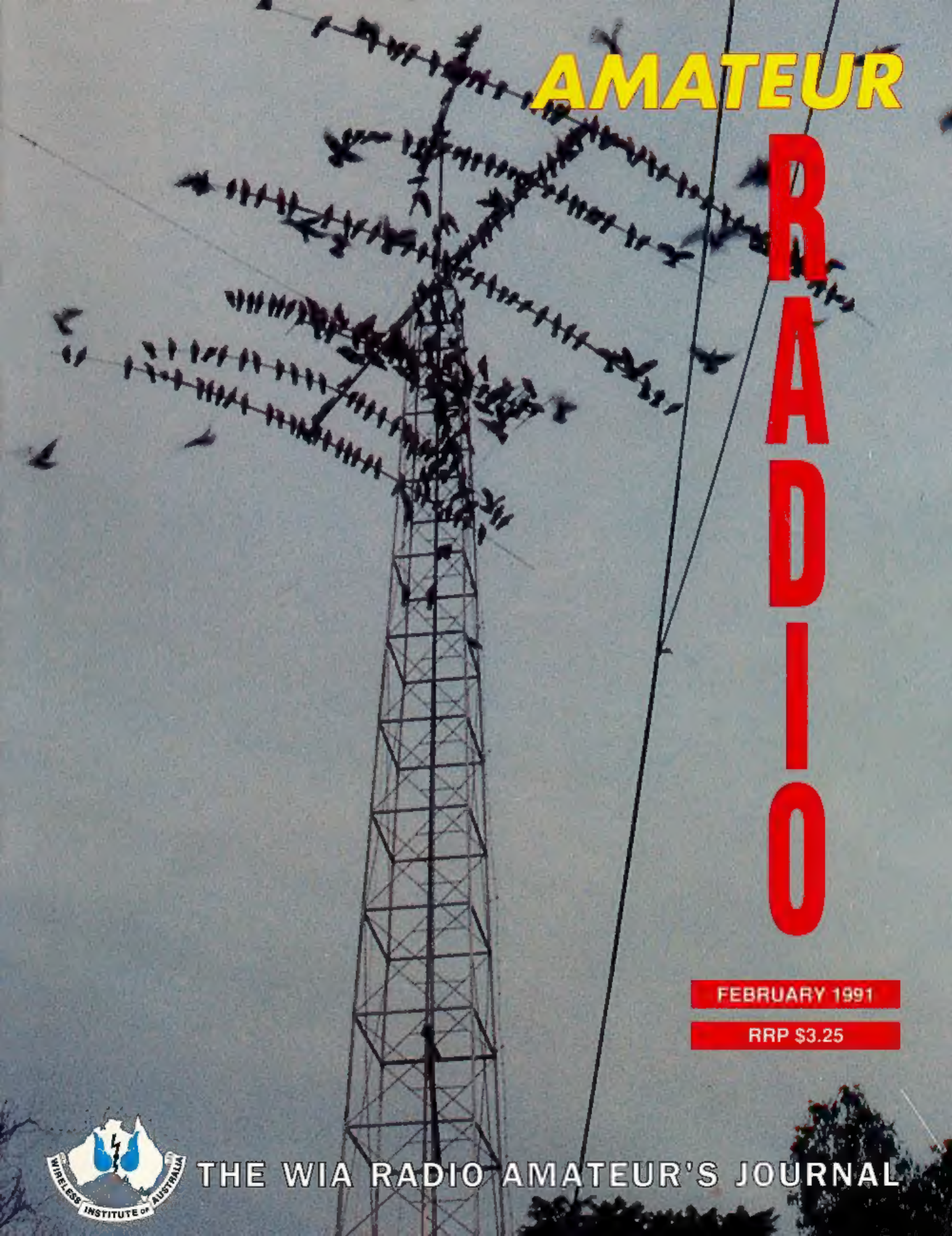

# AMATEUR RADIO

FEBRUARY 1991

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THE WIA RADIO AMATEUR'S JOURNAL

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AMATEUR RADIO

THE WIA RADIO AMATEUR'S JOURNAL

Vol 59 No 2 ISSN 0002-6859 February 1991

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(03) 523 8191
**Fax:** (03) 523 8191
(Non dedicated line)
**Business hours:** 9.30am to 3pm weekdays

## Deadlines

| | Editorial | Hamads |
|---|---|---|
| March | 4/2/91 | 6/2/91 |
| April | 4/3/91 | 6/3/91 |
| May | 8/4/91 | 10/4/91 |

Delivery of AR: If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with the Post Office before contacting the registered office of the WIA.



# CONTENTS

## Reference Data



## Operating



## Columns



We apologise to our readers for the non-appearance of 'VHF/UHF and Expanding World'. Eric VK5LP, although recovering, is still not well enough to contribute his popular column.


## Cover

The TH6 of Heather VK2HD at dusk when she suffers not so much from birdies but a strange loading effect which alters the resonant frequency of her antenna. Heather gives in to the inevitable, and waits until they leave from their daily visit to her lovely shiny tree! Contributed by John Saunders VK2DEJ.

# EDITOR'S COMMENT

BILL RICE VK3ABP EXECUTIVE EDITOR

## Home-Brew Yet Again?

For a number of hours right up until now I have been involved in an interesting, if masochistic activity. I have been looking at all my past editorials, right back to the first in July 1984!

There was a reason for this strange behaviour. This month I felt impelled to write about a rather topical angle on home-brewing one's amateur equipment. I seemed to remember writing something about home-brew before and, of course, I didn't want to say the same old stuff all over again. Surprise! I had tackled the subject, not once, but twice, in November 1986 and October 1987. Both times I had emphasised the fact that the amateur service is unique in being permitted to build our own equipment. Sadly, this privilege has now been partially withdrawn in Canada, from all except those with the highest grade of licence. Do we want that to happen here too?

The more topical angle is in regard to cost of home-brew, particularly for the beginner. New or second-hand, an SSB transceiver costs plenty; if the potential buyer is a student, or unemployed, or mortgaged to the hilt, that sort of money may be impossible. But, as Drew Diamond and others have shown, it *is* possible to build fine equipment relatively cheaply. If you lean towards CW, it's even easier — the simplest modulation is on/off keying! Components need not cost much. Amateur ingenuity is all about using cheap, readily available parts in ways never intended by their designers!

Many other items need cost little or nothing, except the time to make use of them. I have just wound a transformer for a 13.5-volt power supply (20 amps peak load). The core came from a burnt-out unit acquired many years ago for future salvage. The primary wire was stripped from a refrigerator motor main winding on which the start winding was burnt-out but main okay. The secondary was four layers in parallel from the "scrag end of the junkbox". Wire from fully burnt-out motors and transformers can be twisted-up and used for aerial (antenna) construction.

Have I given you some ideas? One of my friends of long-standing calls me a cheapskate! I wonder why I never seem to have any spare time! But, moneywise, there's still a bit left over!

One other item of interest emerged from my masochistic search. This is my editorial Number 73 since taking the chair. A very significant number in amateur radio. May it mean best wishes for a long time yet. Graham and I would be happier if we had a few more technical articles coming in, and there's a letter in Over to You just crying out for a "Learn Amateur Radio Novice Course". Ron Cook's "Novice Notes" were good, some years ago, but we need someone now to do an updated series right from the basics. Perhaps someone who has just made it to novice themselves, and better understands the problems people have. One of you out there can do it! Please?

ar

## Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

# Wireless Institute of Australia

The world's first and oldest National Radio Society - Founded 1910

Representing Australian Radio Amateurs - Member of the International Amateur Radio Union

Registered Executive Office of the WIA: 3/105 Hawthorn Road, Caulfield North, Vic, 3161

All mail to: **PO Box 300, Caulfield South, Vic, 3162** Telephone: (03) 528 5962 (03) 523 8191

Fax: (03) 523 8191 (Non-dedicated line)

Business Hours: 9.30 am to 3.00 pm on Weekdays

**General Manager and Secretary: Bill Roper VK3ARZ**

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# WIA NEWS

FROM THE WIA EXECUTIVE OFFICE

## Vale Ann McCurdy

*Ann McCurdy*
*Federal Office*

It is with deep regret and sadness I notify members that a valued member of the WIA Executive Office staff, Ann McCurdy, passed away on December 21st 1990 after a long and courageous battle against cancer.

Ann gave ten years of efficient, dedicated and selfless work to the WIA, during which time she served in every position in the office. Ann continued working in the Executive Office, between bouts of treatment, until only a few short weeks before her untimely death.

Although not a radio amateur, Ann knew more about the administration and organisation of amateur radio and the WIA than most others. No task was too difficult for her to handle, ranging from the day to day matters like dealing with members' telephone queries and advertising for Amateur Radio magazine, to organising the Annual Federal Conventions.

Not only was Ann a competent and loyal worker for the WIA, she was also a delightful and charming person to know and work with.

Ann is greatly missed in the Executive Office and in WIA circles. The sincere sympathy of all in the WIA who knew Ann is extended to her husband Don and sons Andrew and Simon.

## May Special Issue

There is still time for you to submit an article for the May issue of Amateur Radio magazine which will be another "special" issue, this time concentrating on the Advanced Modes.

Packet, satellite, ATV, slow scan TV, AMTOR - where are all those amateurs who are at the "leading edge" of these rapidly advancing fields? Your article does not have to be technical to the point of blinding the readers with complexity. Many members who have not attempted any of these modes are keen to see simple explanations and instructions.

The Editors cannot print articles they do not have. It's your magazine. Will you help?

## Africa Telecom 90

A recent ITU press release describes the highly successful regional telecommunications exhibition and conference staged by the ITU and held in Zimbabwe early in December.

# WIA DIVISIONS

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually their residential State or Territory, and each Division looks after amateur radio affairs within their State.

| Division | Address | Officers | | | Weekly News Broadcasts | 1991 Fees |
|---|---|---|---|---|---|---|
| VK1 | ACT Division<br>GPO Box 600<br>Canberra ACT 2601<br>Phone (06) 247 7006 | President<br>Secretary<br>Treasurer | Ted Pearce<br>Jan Burrell<br>Ken Ray | VK1AOP<br>VK1BR<br>VK1KEN | 3.570 MHz<br>2m ch 6950<br>70cm ch 6525 2000 hrs Sun<br>(R Denotes repeater) Times 1045 and 1915 on Sunday | (F) $67.50<br>(G) (S) $54.00<br>(X) $40.50 |
| VK2 | NSW Division<br>109 Wigram St<br>Parramatta NSW<br>(PO Box 1066 Parramatta) 2124<br>Phone (02) 689 2417<br>Fax (02) 633 1525 | President<br>Secretary<br>Treasurer<br>(Office hours | Roger Henley<br>Tim Mills<br>David Horsfall<br>Mon-Fri 1100 - 1400<br>Wed 1900 - 2100) | VK2ZIG<br>VK2ZTM<br>VK2KFU | 1.845 MHz AM, 3.595 AM(1045) SSB (1915 only), 7.148 AM (1045 only) 10.125 SSB (1045 only), 28.320 SSB, 52 120 SSB 52.525 FM 144.12 (SSB), 147.000 FM(R) 438.525 FM(R) 584.750 (ATV Sound) 1281.75FM (R) Relays also conducted via many repeaters throughout NSW. | (F) $65.00<br>(G) (S) $52.00<br>(X) $38.00 |
| VK3 | Victorian Division<br>38 Taylor St<br>Ashburton Vic 3147<br>Phone (03) 885 9261 | President<br>Secretary<br>Treasurer<br>Office hours 0900-1600 Tue & Thur | Jim Linton<br>Barry Wilton<br>Rob Hailey | VK3PC<br>VK3XV<br>VK3XLZ | 1.840 MHz AM, 3.615 SSB, 7.085 SSB, 147.250 FM(R) Mt Macedon, 147.225 FM(R) Mt Baw Baw 146.800 FM(R) Mildura, 438.075 FM(R) Mt St Leonard 1030 hrs on Sunday | (F) $69.00<br>(G) (S) $55.00<br>(X) $42.00 |
| VK4 | Queensland Division<br>GPO Box 638<br>Brisbane Qld 4001<br>Phone (07) 284 9075 | President<br>Secretary<br>Treasurer | Murray Kelly<br>Eddie Fisher<br>Eric Fittock | VK4AOK<br>VK4ABX<br>VK4NEF | 1.825, 3.605, 7.118, 10.135, 14.342, 18.132, 21.175, 24.970, 28.400, MHz 52.525 regional 2m repeaters and 1296.100 0900 hrs Sunday Repeated on 3.605 & 147.150 MHz, 1930 Monday | (F) $67.50<br>(G) (S) $54.00<br>(X) $40.50 |
| VK5 | South Australian Division<br>34 West Thebarton Rd<br>Thebarton SA 5031<br>(GPO Box 1234<br>Adelaide SA 5001)<br>Phone (08) 352 3426 | President<br>Secretary<br>Treasurer | Rowland Bruce<br>John McKellar<br>Bill Wardrop | VK5OU<br>VK5BJM<br>VK5AWM | 1820 kHz 3.550 MHz, 7.095, 14.175, 28.470, 53.100, 145.000, 147.000 FM(R) Adelaide, 146.700 FM(R) Mid North, 146.900 FM(R) South East, ATV Ch 34 579.00 Adelaide, ATV 444.250 Mid North (NT)3.555, 146.500, 0900 hrs Sunday | (F) $67.50<br>(G) (S) $54.00<br>(X) $40.50 |
| VK6 | West Australian Division<br>PO Box 10<br>West Perth WA 6005<br>Phone (09) 388 3888 | President<br>Secretary<br>Treasurer | Alyn Maschette<br>John Farnan<br>Bruce Hedland - Thomas | VK6KWN<br>VK6AFA<br>VK6OO | 146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 3.560, 7.075, 14.115,14.175, 21.185, 28.345, 50.150, 438.525 MHz Country relays 3582, 147.350(R) Busselton 146.900(R) Mt William (Bunbury)147.225(R) 147.250 (R) Mt Saddleback 146.725(R) Albany 146.825(R) Mt Barker Broadcast repeated on 3.560 at 1930 hrs. | (F) $69.00<br>(G) (S) $47.50<br>(X) $32.00 |
| VK7 | Tasmanian Division<br>148 Derwent Ave<br>Lindisfarne TAS 7015 | President<br>Secretary<br>Treasurer | Tom Allen<br>Ted Beard<br>Peter King | VK7AL<br>VK7EB<br>VK7ZPK | 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.750 (VK7RNW), 3.570, 7.090, 14.130, 52.100, 144.100 (Hobart) Repeated Tues 3.590 at 1930 hrs | (F) $65.00<br>(G) (S) $52.00<br>(X) $38.00 |
| VK8 | (Northern Territory) is part of the VK5 Division and relays broadcasts from VK5 as shown (received on 14 or 28 MHz). | | | | | |

**Note: All times are local. All frequencies MHz.**

**Membership Grades**
Full (F) Pension (G)
Needy (G) Student (S)
Non receipt of AR (X)

**Three year membership available to (F) (G) (X) grades at fee x 3 times**

The theme chosen was "Mobilising resources for development", highlighting the telecommunication needs of developing countries.

The exhibition in which 124 organisations from 22 countries participated covered a very wide range of products and services. The 550 participants at the accompanying Forum were drawn from the private sector world-wide as well as virtually all administrations of the African continent.

## No-Code USA Amateur Licence

The ARRL Letter of December 14, 1990 announces that the FCC (the USA equivalent of DoTC) will shortly drop the Morse Code requirement for the Technician class licence, resulting in the first code-free class of licence in the USA. The implementation date may be as early as February 1991.

Holders of the code-free licence will pass the same theory exam as previously, but will be permitted to operate only above 30 MHz. No special call sign designator is intended. In order to gain HF privileges, a pass in Morse code at 5 wpm can be added. No changes are planned at this time to the USA Novice licence.

It only took the USA 36 years to catch up with the Australian no-code licence, the Amateur Operators Limited Certificate of Proficiency!

## JOTA

The report on the 33rd Jamboree On The Air, held on 20 - 21st October 1990, was received recently from the National Coordinator, Peter Hughes, VK6HU.

Peter notes a "Total People Involvement" of 38,500, a 14 % increase from last year, with a total number of contacts of 10,000. Even so, only 34 % of Groups nationally participated in JOTA.

The 1990 JOTA saw the first satellite link via AUSSAT into all capital cities and New Zealand. Another first was the transmission of the Opening Broadcast across one Scout Hall on a light beam with a frequency of 454,545 GHz.

In his report Peter stresses the mutual benefits between Scouting/Guiding and amateur radio, and the need for the Scout populations to back the WIA in presenting its case at the forthcoming WARC 92.

## Cosmonaut On Air Again

The ARRL Letter of 14th December also noted that the Soviet astronaut, Musa Manarov, U2MIR, is again on the Soviet permanent space station MIR and has resumed operations on 144.55 MHz FM. He hopes to begin packet activity sometime after January 15th 1991.

## Reference Issue

In recent years, WIA editorial policy has established that each February issue of Amateur Radio magazine is a special data reference issue.

A quick look at the index of this February 1991 issue of Amateur Radio magazine will show just how much of this reference type of material has been crammed in. Most of this material has been checked and updated by volunteer labour to take account of changes that have occurred since the publication of the 1991 Call Book.

Members are invited to comment on reference material which should be included or perhaps deleted. Obviously, for this special-reference issue, much of the normal editorial content has had to be reduced to keep the magazine within the size restrictions.

## JA Amateurs in Antarctic

On 14th November 1990 a Japanese Antarctic Research Expedition left for a two year tour of duty in the polar regions. The party includes 11 members who hold amateur licences and who expect to operate from 8J1RL Showa Base and 8J1RM Asuka Observation Base, probably from 09.30 to 10.30 UTC daily on 7, 14 and 21 MHz.

## WIA Membership Renewals

Although the WIA has had cyclical monthly billing for membership dues for several years now, the majority of membership dues still fall due on 1st January each year. In the first week of December over 4600 membership renewal notices were prepared and sent out to members. Office staff have spent the days over Christmas and the New Year processing the 3000 plus subscriptions so far received as at the first week in January.

Those who forgot to renew their membership before 31st January will not receive the February 1991 issue of Amateur Radio magazine. Those members whose subscriptions fall due at later dates should note that only one magazine is sent after their renewal falls due, but remains unpaid. If your renewal is late back copies of Amateur Radio magazine will cost you $4.00 (including postage).

## Three Year Members

Whoops!! Last month's WIA NEWS item "Membership Renewals" about reading the address label confused a few members who have paid three year subscriptions.

The first paragraph of the news item should, of course, have concluded "unless you have paid a three-year membership one or two years ago.". The 01 on the label indicates that your membership cycle begins on the first of January. Naturally, if an extended membership has been paid, the appropriate January is further off. Unfortunately, the computer print-out does not include the year of renewal (not enough space on the line to fit it in) and most members renew annually.

As membership renewal notices are sent only when the subscriptions fall due, three year members will not receive a notice until their three year renewal is due. If you are one of the steadily increasing number of three year payees, and you are uncertain from your records when your renewal is due, simply contact the Executive Office and the staff will check your records for you.

## 1991 Federal Convention

Planning has already begun for the 1991 WIA Annual Convention to be held on the weekend of 20th - 21st April.

After investigating the costs and benefits of a number of different possible venues, it has been decided to return to the Brighton-Savoy Motel which has been used in previous years. As much of the routine business which used to be handled at the Annual Convention is now dealt with at the quarterly meetings, the length of the annual convention has been able to be reduced to two days.

Items on the agenda will still include Annual Reports and election of office-bearers. Now is the time for members to be contacting their Divisions, and for Divisions to be discussing and submitting motions for the agenda as these need to be received in the Executive Office no later than 12th March 1991.

## February Quarterly Meeting

The first full meeting of the WIA Federal Executive and Federal Council for 1991 will be held on the weekend of 9th and 10th February, at the Executive Office in Melbourne. Representatives from all seven Divisions of the WIA will travel to Melbourne for this meeting to discuss many matters of vital importance to the future of the WIA and amateur radio in Australia.

A report on the proceedings

of this meeting will be presented to WIA members at the earliest opportunity.

## Federal Broadcast Tapes

In response to numerous requests the production of Federal News Tapes from the Executive office has been resumed. These tapes are recorded in the Executive office and distributed to Divisional Broadcast Officers for inclusion in the weekly Divisional broadcasts.

Under normal circumstances, two Federal News segments are recorded at a time, with a limit of four per month, so that in a month with five Divisional news broadcasts, there will be one without a Federal News Tape.

If, for whatever reason, your local Divisional broadcast does not include the complete Federal News Tape, you can always catch up on Federal WIA news by listening to the news broadcast from another Division. Full details of Divisional news broadcasts are included in the WIA Directory on page three of each issue of Amateur Radio magazine.

## WARC 92

Many members have taken the opportunity, when renewing their membership, of sending "a bit extra" to go towards the costs of WIA preparation for, and representation at, WARC 92. These and other donations received for International Representation now stand at $937.50.

It is with pleasure and appreciation that we acknowledge the following donations over the last few months.

| | |
|---|---|
| J. Baldock | VK7JF |
| A. Berry | VK4BDF |
| A. Boerkamp | VK2EQC |
| E. Buck | VK3ADD |
| S. Clamp (2) | VK5ASC |
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D. Johnston VK4EKA
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R. Tulloch VK4BF
J. Wallace VK5BJF
R. Williams VK2AMI

## So You Have a Complaint

From time to time, some members become unhappy about some aspect of the WIA or amateur radio in general. Meetings and on-air ragchews often develop into gripe sessions of "Why don't they___" or "They orta__"

Like all organisations, there is a right way to approach the WIA for you to receive the maximum attention to your concern. In many ways the structure of the WIA could be said to be unnecessarily cumbersome (it was originally modelled closely on the Australian system of Federation - enough said!).

For your representative body to take note of your needs, complaints or suggestions, you must, in the first instance, direct them to your local Division. If it is a local matter, your concerns will be handled by your Divisional Council.

However, if it is a matter for the Federal Body, your Divisional Council will pass the matter to the Federal Executive through the Divisional representative member of Executive and, if necessary, to the Federal Council through the Divisional Federal Councillor.

Please note that the Federal Body of the WIA must be approached through your local Division.

Also, please find out first if you really do have a complaint. Many of the whinges that reach this office are based on rumour, misheard statements, or misinterpreted data, and can often be satisfied by simple explanation or information.

## Over to You Letters

Some months ago it was decided, because of space restrictions in Amateur Radio magazine, to limit the size of all "Letters to the Editor" published in the magazine to a length of 200 words.

Members will be pleased to learn that the restriction on size of "Over to You" letters has now been modified to allow up to 300 words.

This segment of your magazine is provided to enable you to express your viewpoint. Why not use it?

## Amateur Radio Content

In the November 1990 issue of Amateur Radio I asked for comment about the future content of the magazine. A number of responses have been received and, as was to be expected, a wide range of views has been presented. It is probably not going to be possible to please everyone completely, but either of two main themes were present in each response. Keep the emphasis in Amateur Radio magazine on technical articles, and provide more articles for beginners.

Great! That is exactly what the Publications Committee had decided. But where are these articles going to come from?

Amateur Radio magazine is a membership journal, produced mainly by volunteers, and dependent entirely on the submission of articles for publication by WIA members. Yes, that means you!

When was the last time you submitted an article for publication in your journal?

Despite the commercialisation of our hobby, the future of amateur radio is still dependent upon experimentation. Experimentation with electronics and with methods of communication; and the sharing of that experimentation with other like-minded enthusiasts.

If the hobby of amateur radio is to survive in Australia, the radio amateurs of Australia must experiment and must publish their results. The obvious place to publish is your own journal, Amateur Radio.

Can the Editors look forward to receiving your articles soon?

## Technical Extracts

Amateur Radio magazine policy has always been to not republish articles from overseas publications. And there have only been rare, if justifiable, exceptions to that rule.

Several overseas radio amateur magazines publish short extracts from interesting technical articles published elsewhere. Probably the most famous of these technical digests is "Technical Topics" by Pat Hawker G3VA which appears monthly in the RSGB publication "Radio Communications".

Incidentally, it is interesting to note the frequency with which these overseas magazine columns refer to articles published in our own Amateur Radio magazine.

Well, the time has come for Amateur Radio magazine to commence its own regular "Technical Extracts" column, bringing to WIA members brief details of interesting overseas experimentation and articles.

The only problem is, who will write the column?

Basically we need someone who is technically knowledgeable and able to competently precis articles. If you are able to assist, please contact the Executive Office as soon as practicable. Do not worry if you do not normally have access to overseas publications. We will ensure that you receive copies of all the major English language overseas amateur radio publications. **ar**

# Callsign Suffixes

Amateur station callsigns normally commence with the letters "VK" followed by a numerical State identifier (ie: 1/2/3/4/5/6/7/8/9/ OR 0). HOWEVER, TO COMMEMORATE SPECIAL EVENTS, THE USE OF "VI" OR "AX" may be authorised on a temporary basis.

The alphanumeric series outlined is suffixed with up to three letters which indicate the class of amateur licence held and the individual identity of the station. Callsign suffixes are allocated according to the following table:

### Two-Letter Suffixes:

All two-letter suffixes except "AA" and "WI" indicate a full call licensee.
AA = Official DOTC callsign
WI = Allocated to the Wireless Institute of Australia.

### Three-Letter Suffixes:

AAA-AZZ = Full call licensees
BAA-BZZ = Full call licensees
CAA-CZZ = Full call licensees
DAA-DZZ = Full call licensees
EAA-EZZ = Full call licensees
FAA-FZZ = Full call licensees
GAA-GZZ = Full call licensees
(Note: GGA-GGZ — allocated to the Girl Guides Association)
AA-HZZ = Not allocated
IAA-IZZ = Not allocated
JAA-JZZ = Combined licensees
KAA-KZZ = Combined licensees
LAA-LZZ = Novice licensees
MAA-MZZ = Novice licensees
NAA-NZZ = Novice licensees
OAA-OZZ = Not allocated
PAA-PZZ = Novice licensees
QAA-QZZ = Not allocated; can be confused with Q codes
RAA-RZZ = Beacons and repeaters
SAA-SZZ = Full call licensees
(Note: SAA-SDZ — allocated to the Scout Association)
TAA-TZZ = Limited licensees
UAA-UZZ = Limited licensees
VAA-VZZ = Novice licensees
WAA-WZZ = Full call licensees
(Note: WIA-WIZ allocated to the WIA)
XAA-XZZ = Limited licensees
YAA-YZZ = Limited licensees
ZAA-ZZZ = Limited licensees
Note: Certain "non-standard" suffixes are allocated, including: RAN, GGx, TTx, ITU, BSx, SJx, etc.

# Stolen Equipment Register

The Stolen Equipment Register is one of many services offered to members by the Wireless Institute of Australia. It has now been in operation since 1980, and is maintained on a computer database in the Executive Office. At regular intervals, updates of the complete list, sorted into categories of : Equipment Manufacturer/Model, Owner, Date Stolen are distributed to each Division. Members wanting to take advantage of their register, either to publicise the theft of their equipment, or to check equipment they are about to purchase, may contact their Division , or write or telephone the Executive Office.

Any telephone reports of stolen equipment must be followed immediately with written confirmation of the details. For maximum efficiency, these details should include: Manufacturer's name, Model, Type of equipment, Serial number, Date stolen, Owner's name, address and call sign, any distinguishing features or modifications, Police contact (if any). When equipment is recovered, it is important that you advise the Executive Office as soon as practicable. This list is the most up-to-date information we have at the time of going to press, but is based entirely on information received from you, the member. Would all readers please check this list and immediately advise if there are any amendments.

# WIA Database List of Unrecovered Stolen Equipment as at 8 January 1991

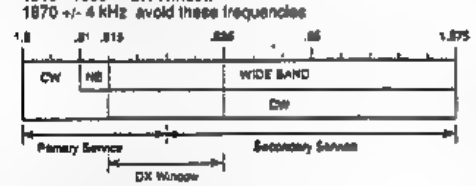
| MANUFACTURER | MODEL | DESCRIPTION | SERIAL NUMBER | OWNER | DATE STOLEN | COMMENT |
|---|---|---|---|---|---|---|
| AZDEN | PCS-3000 | 2M FM MOBILE | 36738 | VK2KCV | 01/06/87 | NO MICROPHONE - NO BRACKET |
| BELCON | LS-202E | 2M M/MODE H/HELD | 401992 | VK3YYD | 07/11/90 | |
| BWD | 804 | DC-10MHZ SCOPE | 51767 | VK2ZOW | 11/01/90 | |
| DICK SMITH | | AUDIO GENERATOR | | VK2XJC | 15/05/85 | - |
| | EXPLORER | 70CM FM TRANSCEIVER | | VK2KUR | 24/09/84 | EXTENSIVE MODIFICATIONS |
| DRAKE | TR-7 | HF TRANSCEIVER | 2333 | VK2AML | 16/05/90 | OWNERS NAMES ENGRAVED |
| DRESSLER | EVV2000 | 2M PRE-AMP | 1027 | VK2XJC | 15/05/85 | - |
| ELECTROPHONE | TX470T | UHF TRANSCEIVER | 50600672 | VK6ZPL | 11/04/87 | - |
| EMTRONICS | NOISE BRIDGE | EM342 | | VK4AAE | 27/10/89 | - |
| GALAXY | 5 | HF TRANSCEIVER | 5872V2118 | VK3UB | 06/06/87 | REMOTE VFO |
| | 5 | HF TRANSCEIVER | 5503V1309 | VK3UB | 06/06/87 | REMOTE VFO |
| GCOL | GV-16 | 2 M FM HANDHELD | | VK3JDO | 17/11/89 | WITH ANTENNA |
| GME | TX472S | 40 CH UHF T/CEIVER | 912 48059 | VK3KLF | 14/08/90 | - |
| | TX830 | 40 CH AM CB | 8770556 | VK4IS | 15/08/90 | - |
| ICOM | HM4G | SPEAKER MIC | - | VK5ZGB | 16/12/89 | - |
| | IC02A | 2M FM HANDHELD | 23186 | VK2FZH | 09/06/89 | WITH BP3 AND BC25E |
| | IC02A | 2 M FM HANDHELD | 29906249 | VK5ZGB | 16/12/89 | - |
| | IC044 | 70 CM FM HANDHELD | - | VK5ZGB | 16/12/89 | - |
| | IC202 | 2M SSB TRANSCEIVER | 5144 | VK4ZSH | 03/09/85 | - |
| | IC202 | 2M SSB TRANSCEIVER | 03482 | VK3ZJY | 11/08/87 | - |
| | IC202 | 2M SSB TRANSCEIVER | 41013616 | VK3ZBI | 01/10/85 | - |
| | IC211 | 2M M/MODE T/CEIVER | 6804309 | VK3BRV | 17/10/84 | - |
| | IC215 | 2M FM PORT T/CEIVER | 05156 | VK2AMX | 20/11/84 | - |
| | IC22 | 2M FM TRANSCEIVER | 12266 | VK3BLC | 29/04/85 | - |
| | IC22 | 2M FM TRANSCEIVER | 12467 | VK1TR | 06/02/90 | NO POWER PLUG/DIAL LAMP UNUSUAL |
| | IC22 | 2M FM TRANSCEIVER | 10918 | VK3XD | 06/02/90 | - |

| MANUFACTURER | MODEL | DESCRIPTION | SERIAL NUMBER | OWNER | DATE STOLEN | COMMENT |
|---|---|---|---|---|---|---|
| | IC22A | 2M FM TRANSCEIVER | FALLEN OFF | VK3YV | 21/08/87 | EARLY MODEL - 22 CHANNELS |
| | IC22A | 2M FM TRANSCEIVER | 8653 | VK3ZU | 03/05/84 | - |
| | IC22A | 2M FM TRANSCEIVER | 3402112 | VK2ZIG | 01/07/87 | - |
| | IC22A | 2M FM TRANSCEIVER | 1914 | VK4ZSH | 03/09/85 | - |
| | IC22S | 2M FM TRANSCEIVER | 11912 | VK2ETJ | 06/03/88 | PRE-AMP, SOCKET |
| | IC22S | 2M FM TRANSCEIVER | 14957 | VK3DYZ | 11/09/84 | - |
| | IC22S | 2M FM TRANSCEIVER | 02014533 | VK3KAW | 23/12/85 | - |
| | IC22S | 2M FM TRANSCEIVER | 07570 | VK3KJA | 14/12/87 | DIGITAL READOUT |
| | IC22S | 2M FM TRANSCEIVER | 15674 | VK2CIB | 11/02/89 | - |
| | IC22S | 2M FM TRANSCEIVER | 14727 | VK3ME | 14/08/85 | - |
| | IC255A | VHF TRANSCEIVER | 10309425 | VK3KLF | 14/06/90 | - |
| | IC25A | 2M FM TRANSCEIVER | 03831 | VK2DPM | 04/11/84 | VFO MODIFIED |
| | IC280 | TRANSCEIVER | 02592 | VK2BVW | 30/03/88 | - |
| | IC290A | ALL MODE TRANSCEIVER | 001532 | VK3YFA | 01/11/90 | - |
| | IC290H | ALL MODE TRANSCEIVER | 17701965 | VK3ZBI | 01/10/85 | - |
| | IC290H | ALL MODE TRANSCEIVER | 17703342 | EMTRONICS | 17/02/86 | - |
| | IC2A | 2M FM HANDHELD | 04484 | VK1MX | 21/01/85 | VINYL CASE |
| | IC2A | 2M FM HANDHELD | 12213837 | VK5ABY | 22/12/88 | - |
| | IC2A | 2M FM HANDHELD | 12209700 | VK2AHF | 08/09/87 | - |
| | IC2A | 2M FM HANDHELD | 12213830 | VK3YOD | 02/12/83 | SPARE BATTERY PACK |
| | IC2A | 2M FM HANDHELD | 29001052 | VK2CKD | 05/02/86 | - |
| | IC2GAT | 2M FM HANDHELD | 08616 | VK3JDO | 17/11/89 | WITH BP70, BC36, BPSA X 2 |
| | IC3200 | 2M/70CM TRANSCEIVER | 01046 | VK2CIM | 02/08/87 | - |
| | IC45A | 70CM FM TRANSCEIVER | 18351005 | VK3KJC | 22/02/84 | MEMORY BACKUP UNIT |
| | IC45A | 70CM TRANSCEIVER | 01876 | VK2DPM | 04/11/84 | - |
| | IC490A | 70CM TRANSCEIVER | 16101192 | VK3BVO | 01/03/83 | - |
| | IC4E | 70CM H/H TRANSCEIVER | 18103021 | VK3YOD | 02/12/83 | SPARE BATTERY PACK |
| | IC4E | 70CM H/H TRANSCEIVER | | VK2KZZ | 16/08/87 | CALLSIGN ENGRAVED |
| | IC502 | 6M SSB TRANSCEIVER | 00618 | VK3ZJY | 11/08/87 | - |
| | IC551 | 6M ALL MODE T/CEIVER | 01273 | VK4ZSH | 03/09/85 | INCLUDING FM, VOX |
| | IC551 | 6M ALL MODE T/CEIVER | 9401253 | VK3ZBI | 01/10/85 | - |
| | IC551D | 6M TRANSCEIVER | 99003878 | VK3YSG | 01/01/84 | - |
| | IC560 | 6M TRANSCEIVER | 01153 | VK3MT | 01/02/90 | ENGRAVED SECURITY NO. T-00510 |
| | IC701 | HF TRANSCEIVER | 8001039 | VK2??? | 15/02/88 | - |
| | IC701PS | POWER SUPPLY | 7800978 | VK2??? | 15/02/88 | - |
| | IC720A | HF TRANSCEIVER | 08242 | VK4ZSH | 03/09/85 | - |
| | IC721 | HF TRANSCEIVER | 003863 | A. WOJNAR | 02/07/90 | TRANSCEIVES ALL RFDS FREQUENCIES |
| | IC730 | HF TRANSCEIVER | 13606798 | MELB UNIV | 18/09/85 | HOME BREW POWER SUPPLY |
| | IC735 | HF TRANSCEIVER | 36304455 | EMTRONICS | 17/02/86 | - |
| | ICPS20 | POWER SUPPLY | 10101966 | VK3YSG | 01/01/84 | - |
| KDK | 2025 MK II | 2M TRANSCEIVER | | VK2ETJ | 06/03/88 | DEFUNCT FINAL |
| | FM2025 MK 2 | 2M FM TRANSCEIVER | A5020 | VK2AML | 03/07/88 | SHARPE MICROPHONE |
| | MULTI 7 | 2M HANDHELD | | VK2TJB | 09/02/88 | DRIVERS LICENCE NO. ENGRAVED |
| KENWOOD | AT180 | ANTENNA TUNER | 0020450 | VK2??? | 11/11/87 | - |
| | AT200 | ANTENNA TUNER | 820049 | VK2DCB | 16/08/84 | - |
| | DG5 | DIGITAL DISPLAY | 730475 | VK2DCB | 16/08/84 | - |
| | DM81 | GRID DIP OSCILLATOR | 4020163 | VK2KLF | 10/08/89 | STENCILLED IN 20MM BRIGHT YELLOW |
| | MC-50 | DESK MICROPHONE | N/A | VK5ABY | 22/12/88 | - |
| | MS1 | MOBILE MOUNT | - | VK5BJA | 30/05/89 | - |
| | SP520 | SPEAKER | | VK2DCB | 16/08/84 | - |
| | TM221A | 2M FM TRANSCEIVER | 8110722 | VK2CCD | 09/04/88 | - |
| | TM221A | 2M FM TRANSCEIVER | 8022541 | VK3ZJY | 11/08/87 | - |
| | TM231A | 2M FM TRANSCEIVER | 0051016 | VK4IS | 27/07/90 | - |
| | TM441A | 432 MHZ FM TRANSC | 6010370 | VK4IS | 27/07/90 | - |
| | TR2400 | 2M FM HANDHELD | 0061950 | VK2DPM | 28/08/84 | - |
| | TR2400 | 2M FM HANDHELD | 0061926 | VK2PJ | 20/04/85 | CALLSIGN ENGRAVED |
| | TR2500 | 2M FM HANDHELD | 3040009 | VK2ZOC | 29/05/85 | MICROPHONE AND CHARGER |
| | TR2500 | 2M FM HANDHELD | 3033045 | VK2DYW | 19/02/87 | - |
| | TR2600A | 2M HANDHELD | 7030631 | VK5AAR | 03/10/86 | - |
| | TR2600A | 2M HANDHELD TCVER | 5060934 | VK2KLF | 10/08/89 | MISSING HAND STRAP |
| | TR2600A | 2M HANDHELD | 5060895 | VK5BJA | 30/05/89 | INCLUDING RUBBER DUCK ANTENNA |
| | TR751A | 2M ALL MODE T/CEIVER | 7050512 | VK3KMJ | 25/02/90 | GREY MIC - DCL MODEM BOARD |
| | TR7850 | 2M FM H/HELD T/CEIVR | 2020360 | VK2DED | 08/03/84 | "N" CONNECTOR |
| | TR7850 | 2M FM H/HELD T/CEIVR M | 2020561 | VK2ALK | 22/10/88 | - |
| | TR7850 | 2M FM H/HELD T/CEIVR | 1111125 | VK2CCK | 07/02/86 | - |
| | TR7950 | 2M FM TRANSCEIVER | 4010747 | VK2TVG | 06/08/85 | - |
| | TR8000 | 2M ALL MODE T/CEIVER | 1020527 | VK3KAH | 03/01/87 | ADDITIONAL MEMORY SWITCH |
| | TR9000 | 2M ALL MODE T/CEIVER | 1050780 | VK3YSG | 01/01/84 | - |
| | TS120S | HF TRANSCEIVER | 950819 | VK2??? | 11/11/87 | - |
| | TS120V | HF TRANSCEIVER | 0081224600 | VK2VWN | 03/05/85 | MT35 MICROPHONE |
| | TS130S | HF SSB TRANSCEIVER | 1090168 | VK5ABY | 22/12/88 | - |
| | TS130S | HF TRANSCEIVER | 40401C8 | VK2BVW | 30/03/88 | - |
| | TS130SE | HF TRANSCEIVER | 2060897 | VK2KAH | 03/01/87 | - |
| | TS430S | HF TRANSCEIVER | 4010322 | VK2XJC | 15/05/85 | INCLUDING FM, FILTER |
| | TS440S | HF TRANSCEIVER | 0050078 | VK2FIT | 01/07/90 | - |
| | TS440S | HF TRANSCEIVER | 7090271 | VK2FIT | 24/10/89 | WITH PS50 PSU & MC85 DESK MIC |
| | TS440S | HF TRANSCEIVER | 0101192 | VK3NRG | 14/10/90 | STOLEN FROM VEHICLE IN PERTH |
| | TS520 | HF TRANSCEIVER | 010296 | VK2ZQW | 11/01/90 | - |
| | TS520S | HF TRANSCEIVER | 820972 | VK2DCB | 16/08/84 | - |
| | TS520S | HF TRANSCEIVER | ? | VK2FZH | 09/06/89 | STICKER FROM "TURKEY RADIO" |
| | TS670 | 6M & HF TRANSCEIVER | ? | VK2ZXC | 28/06/90 | - |
| | TS700A | 2M ALL MODE T/CEIVER 3 | 50409 | VK3ZJY | 11/08/87 | - |
| | TS930S | HF TRANSCEIVER | 3050176 | VK7JG | 13/01/83 | - |
| | TV506 | 6M CONVERTER | 720089 | VK2ZQW | 11/01/90 | - |
| | VFO520 | EXTERNAL VFO | | VK2DCB | 16/08/84 | - |
| KYOKUTO | FM144 | VHF FM TRANSCEIVER | 8296 | VK2ZQW | 11/01/90 | - |
| KYOTO | FM144-10 | 2M FM TRANSCEIVER | 5027 | VK2KUR | 24/09/84 | CALLSIGN ENGRAVED |
| LEADER | LSG11 | SIGNAL GENERATOR | 0041244 | VK3KJA | 14/12/87 | - |
| | LSG16 | SIGNAL GENERATOR | 1081098 | VK3YSG | 01/01/84 | MISC BITS ALSO |
| MICROWAVE | 40W-144 MHZ | 2M LINEAR AMPLIFIER | - | VK2ZQW | 11/01/90 | - |
| MIRAGE | B1016 | 2M 160W PWR AMP | 550779 | VK3KAW | 23/12/85 | - |
| PHILLIPS | 828 | 2M FM TRANSCEIVER | 44982 | VK4IS | 15/08/90 | 10 CHANNELS - 3 FITTED |
| REALISTIC | AX190 | HF RECEIVER | 500111 | VK3KJA | 14/12/87 | - |
| | SP190 | SPEAKER ENCLOSURE | 20-5191 | VK3KJA | 14/12/87 | - |
| REGENCY | HX2000 | HANDHELD | | DSE VIC | 13/05/85 | - |
| SAIKO | SC7000 | SCANNER | | VK2XJC | 15/05/85 | BNC ANTENNA SOCKET |
| SONY | 2001D | COMMUNICATIONS RECVR ? | | VK2FZH | 09/06/89 | BROKEN ANTENNA |
| STANDARD | C520 | 2M & 70 CM HANDHELD | F140829 | ANDREWS COMM | 18/02/90 | STOLEN AT GOSFORD FIELD DAY |
| TELEQUIP'T | 551 | OSCILLOSCOPE | | VK4AAE | 27/10/89 | - |
| TEMPO | 1S | 2M HANDHELD | 012240 | VK3UB | 06/06/87 | - |

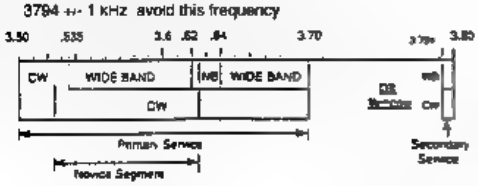
| | | | | | | |
|---|---|---|---|---|---|---|
| THORN | | B&W TV | 107512 | VK2XJC | 15/05/85 | MOD FOR COMPUTER |
| TOKYO | HL160V | 2M POWER AMPLIFIER | 825331 | VK2XJC | 15/05/85 | |
| | HL86V | 6M POWER AMPLIFIER | 819595 | VK2XJC | 15/05/85 | - |
| | HL90U | 70CM POWER AMP | 8304246 | VK2XJC | 15/05/85 | - |
| TRIO | CS1560A2 | CRO | 10-20171 | VK3YSG | 01/01/84 | - |
| UNIDEN | 2020 | HF TRANSCEIVER | 50806009 | VK2KSY | 16/09/85 | - |
| WELZ | SP200 | SWR/PWR METER | 600384 | VK2XJC | 15/05/85 | - |
| YAESU | FAS14R | REMOTE ANT SEL | 140138 | VK3KJA | 14/12/87 | - |
| | FC707 | ANTENNA TUNER | 11140775 | VK2DBB | 28/04/86 | |
| | FC707 | ANTENNA TUNER | 1N180255 | VK4AAE | 27/10/89 | |
| | FC707 | ANTENNA TUNER | 11140765 | VK3DHV | 01/06/87 | |
| | FL2010 | 2M LINEAR AMPLIFIER | 1L031300 | VK3DKO | 25/08/88 | MOUNTED IN CRADLE |
| | FP707 | POWER SUPPLY | 4C050487 | VK4AAE | 27/10/89 | |
| | FP707 | 12V 20 AMP P/SUPPLY | 1H120548 | VK5ABY | 22/12/88 | - |
| | FRA7700 | ACTIVE ANTENNA | 2H050293 | VK2??? | 11/11/87 | - |
| | FRG7 | HF RECEIVER | 299L26099 | VK3ZLY | 28/07/83 | - |
| | FRG7700 | RECEIVER | 2K210752 | VK2??? | 11/11/87 | - |
| | FRG7700 | RECEIVER | 3M260983 | VK2XPU | 01/08/89 | |
| | FRT7700 | ANTENNA TUNER | 2K070479 | VK2??? | 11/11/87 | |
| | FT101B | HF TRANSCEIVER | 83L102373 | VK3KJA | 14/12/87 | |
| | FT101E | HF TRANSCEIVER | 8G350283 | VK2SS | 29/06/84 | |
| | FT101E | HF TRANSCEIVER | 7K301042 | VK5EZ | 08/07/89 | - |
| | FT101E | HF TRANSCEIVER | 8L370414 | VK3DYZ | 11/09/84 | - |
| | FT107M | HF TRANSCEIVER | 1H110012 | VK2ALN | 03/03/87 | - |
| | FT200 | HF TRANSCEIVER | 2K332252 | VK3DYZ | 11/09/84 | - |
| | FT207R | 2M HANDHELD | 1D132704 | VK2ETJ | 06/03/88 | - |
| | FT207R | 2M FM HANDHELD | 10132725 | VK2EMC | 04/03/85 | BATTERY COVER MISSING |
| | FT208R | 2M FM HANDHELD | 3N350964 | VK2CBA | 30/07/85 | - |
| | FT208R | 2M FM HANDHELD | 4E382078 | VK2PJ | 29/03/89 | FAULTY VCO |
| | FT209R | 2M FM HANDHELD | 4L06245 | DSE VIC | 13/05/85 | - |
| | FT209RH | 2M FM HANDHELD | 4K050838 | VK3CE | 01/01/85 | BLUE VINYL CASE |
| | FT209RH | 2M FM HANDHELD | 5K190401 | VK2HW | 21/02/86 | LEATHER CASE |
| | FT224 | | 6G307290 | VK3OV | 28/05/87 | - |
| | FT227RA | 2M FM TRANSCEIVER | 8L021912 | VK3ERG | 06/10/90 | - |
| | FT230 | 2M FM TRANSCEIVER | | VK2EQD | 18/08/87 | - |
| | FT230R | 2M FM TRANSCEIVER | 4H081794 | DSE VIC | 13/05/85 | - |
| | FT290R | 2M FM TRANSCEIVER | 2D100942 | VK3DKO | 25/08/88 | CALLSIGN ENGRAVED |
| | FT290R | 2M FM TRANSCEIVER | 5G450016 | VK7HW | 18/04/88 | MOBILE BRACKET |
| | FT290R | 2M FM TRANSCEIVER | 4E360664 | VK3KGH | 01/06/85 | VINYL CASE |
| | FT290R | 2M FM TRANSCEIVER | 3C280713 | VK2EQD | 12/11/86 | - |
| | FT290R | 2M FM TRANSCEIVER | 1L081321 | VK3KJC | 22/02/84 | - |
| | FT290R | 2M FM TRANSCEIVER | 8F 280702 | VK4AAE | 27/10/89 | COMPLETE WITH NICADS |
| | FT290R | 2M FM TRANSCEIVER | 1M081340 | VK2VE | 04/01/87 | OWNERS NAME |
| | FT480R | 2M ALL MODE T/CEIVER | 1H12069 | VK1ZUR | 29/05/84 | - |
| | FT620 | 6M TRANSCEIVER | 010489 | VK4ZSH | 03/09/85 | |
| | FT680R | HF TRANSCEIVER | 3H060202 | VK2XJC | 15/05/85 | - |
| | FT7 | HF TRANSCEIVER | 8K110846 | VK2IV | 04/11/88 | DIAL ILLUMINATION MODIFICATION |
| | FT7 | HF TRANSCEIVER | 8I090728 | VK2KSY | 16/09/85 | - |
| | FT7 | HF TRANSCEIVER | 81090839 | VK3BYK | 28/06/83 | - |
| | FT707 | HF TRANSCEIVER | - | VK4AAE | 27/10/89 | - |
| | FT707 | HF TRANSCEIVER | 1D161414 | VK3DHV | 01/06/87 | - |
| | FT708R | 70CMS FM HANDHELD | 2J181463 | VK2PJ | 29/03/89 | - |
| | FT708R | 70CM FM HANDHELD | 1H010948 | VK2PJ | 20/04/85 | CALLSIGN ENGRAVED |
| | FT757GX | T/CVR & YM38 MIC | 3M040371 | VK2DBB | 28/04/86 | CALL SIGN ENGRAVED |
| | FT780R | 70CM TRANSCEIVER | 1J061516 | VK3ZBI | 01/10/85 | - |
| | FT780R | 70CM TRANSCEIVER | 3F070521 | VK2XJC | 15/05/85 | - |
| | FV101 | EXTERNAL VFO | 1E353 | VK3KJA | 14/12/87 | - |
| | FV707DM | EXTERNAL DIGITAL VFO | 0L060097 | VK4AAE | 27/10/89 | - |
| | YS01P | MONITORSCOPE | 9L030072 | VK1ZVR | 15/12/84 | INCLUDING MODULES |
| | YC-355D | 200MHZ FREQ COUNTER | - | VK2ZOW | 11/01/90 | - |
| | YP150 | DUMMY LOAD | 81090469 | VK2DCB | 16/08/84 | - |

# Australian Band Plans (HF)

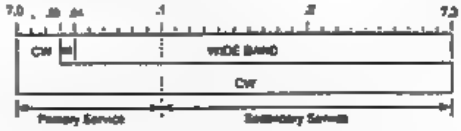
**The 160 Metre Band**
1800 - 1875 CW
1810 - 1815 Narrow Band Modes
1815 - 1875 Wide Band Modes
1815 1835 DX Window
1870 +/- 4 kHz avoid these frequencies



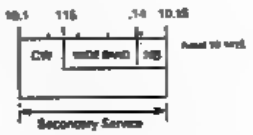

**The 80 Metre Band**
3500 - 3700 CW
3525 3625 Novice Segment
3535 3620 Wide Band Modes
3620 3640 Narrow Band Modes
3640 3700 Wide Band Modes
3794 3800 DX Window
3794 +/- 1 kHz avoid this frequency



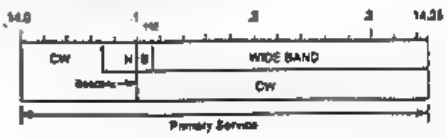

**The 40 Metre Band**
7000 - 7300 CW
7030 - 7040 Narrow Band Modes
7040 - 7300 Wide Band Modes



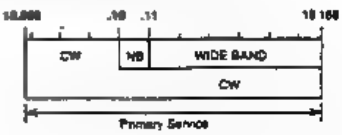

**The 30 Metre Band**
10.100 10.150 CW
10.115 10.140 Wide Band Modes (VK only)
10.140 10.150 Narrow Band Modes
10.1415 +/- 4 kHz avoid these frequencies



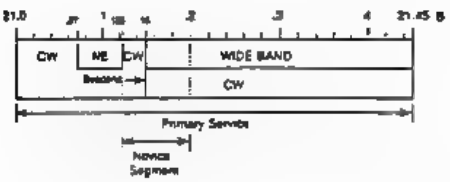

**The 20 Metre Band**
14.000 - 14.350 CW
14.070 - 14.112 Narrow Band Modes
14.095 14.112 Packet Radio
14.112 14.350 Wide Band Modes
14.100 +/- 500 Hz Beacon guard band
14.230 SSTV calling frequency
14.250 FAX calling frequency



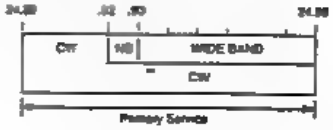

**The 17 Metre Band**
18.068 18.168 CW
18.100 18.110 Narrow Band Modes
18.110 - 18.168 Wide Band Modes



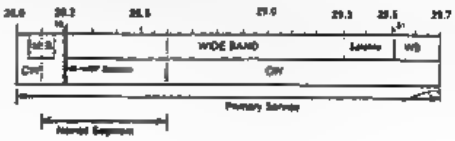
The 15 Metre Band
21.000 21.450 CW
21.070 21.125 Narrow Band Modes
21.125 21.150 CW
21.125 21.200 Novice segment
21.150 21.450 Wide Band Modes
21.150 +/- 500 Hz IBP Beacon Guard Band
21.340 +/- 5 kHz SSTV




The 12 Metre Band
24.890 - 24.990 CW
24.920 - 24.930 Narrow Band Modes




The 10 Metre Band
28.000 29.700 CW
28.050 28.150 Narrow Band Modes
28.100 28.600 Novice segment
28.150 28.190 CW
28.190 28.200 IBP Beacon Segment
28.200 28.300 Existing beacons
28.200 29.300 Wide Band Modes
28.680 +/- 5 kHz SSTV
29.300 - 29.510 Satellite Downlink
29.510 - 29.700 Wide Band (FM)
29.520 - 29.580 Repeater Inputs
29.600 Simplex
29.620 - 29.680 Repeater Outputs




# Australian Band Plans:

## The VHF Bands

The VHF Band Plans were revised in October 1990 by the extension of the EME segment on bands above 6 metres, moving the CW calling frequency to .050 on 2 metres and above, and adopting expanded packet radio segments on the 2 metre and 70 cm bands. The 6 metre plan has been revised to allow for 50 MHz beacons in VK5, VK6 and VK8.

On higher bands, a revision has been made to the 23 cm band plan to reinstate a VSB ATV channel at 1285 - 1292 MHz, and this has caused in a slight shift of the Simplex Voice and Digital seg- ments. Proposed new band plans for 2300 MHz and above were pub- lished in October 1990 "Amateur Radio" and are reproduced here. These will be presented for adoption in February 1991.

### General

### 1. Narrow Band Segments

On each VHF/UHF band a segment of up to 1 MHz is reserved for narrow band modes and weak signal operation, including segments for CW, EME, DX operation, and beacons. This segment begins at the following frequency on each band:

| | | | |
|---|---|---|---|
| 6 metres: | 52 MHz | 9 cm | 3456 MHz |
| 2 metres: | 144 MHz | 6 cm | 5760 MHz |
| 70 cm: | 432 MHz | 3 cm | 10368 MHz |
| 23 cm: | 1296 MHz | 1 cm | 24192 MHz |
| 13 cm: | 2304 MHz | 6 mm | 47088 MHz |

### 2. DX Only Segment

On all bands the segment up to .100 is reserved for DX operation only, using narrow band modes (CW, FSK, SSB etc), with bandwidths up to 3 kHz. This segment also contains an exclusive EME sub- band. The space reserved for EME is as follows:

6 metres: 52.000 - 52.010 23 cm: 1296.900 - 1296.050
2 metres: 144.000 144.050 13 cm: 2303.900 - 2304.050
70 cm: 431.950 432.050

For the higher bands, the EME segment is 3456 q 100 kHz, 5760 q 100 kHz etc.

Calling frequencies within the DX Only segment are:
CW: 52.025, 144.050, 432.050, 1296.050 , 2304.050

RTTY (FSK): 52.075 144.075 432.075, 1296.075, 2304.075

### 3. General Phone/CW Segment

Above the DX Only segment on each band is a General Phone/CW seg- ment for all modes up to 6 kHz bandwidth. This includes three calling frequencies: .100 SSB/CW calling frequency (primary) .200 SSB/CW calling frequency (secondary) .300 SSTV calling frequency

On all bands the .100 calling frequency is used as a primary DX frequency, and the .200 frequency is commonly used for aircraft enhancement and other DX operation. On 50 MHz, the international DX calling frequency is 50.110 MHz. Calling frequencies for FM voice, RTTY, SSTV etc are located in the FM Simplex segments of each band.

On the bands above 2.3 GHz, there are only two all-mode calling frequencies:

.100 Primary / DX/

.200 Secondary / Local calling frequencies are used to make initial contact, then move to another frequency. Prolonged contacts or test transmissions on calling frequencies are anti-social - others may be waiting to make (or hear) a call.

### 4. Beacon Segments

The primary beacon segment on each band is .400 - .500. On 6 metres only, the secondary segment is 52.300 - 52.400 MHz. On all other bands, the secondary beacon segment is .500 - .600. Beacons are allocated according to a call area allocation plan, with the 10 kHz digits of the frequency indicating the call area.

The allocation of the primary segment is as follows:

| | | | |
|---|---|---|---|
| VK0 | 400 409 | VK4 | 440 - 449 |
| VK7 | 470 479 | VK1 | 410 - 419 |
| VK5 | 450 459 | VK8 | 480 - 489 |
| VK2 | 420 429 | VK6 | 460 - 469 |
| VK9 | 490 499 | VK3 | 430 - 439 |

The pattern is the same for the secondary segment. The present 5 kHz channelling provides a total of four clear channel beacon frequencies per call area.

On 50 MHz, 50.056 MHz is reserved for time-shared beacons north of the Tropic of Capricorn, and 50.066 MHz south of the Tropic. A segment for continuous duty beacons in VK5, VK6 and VK8 has also been adopted - see the 6 metre band plan for details.

### 5. General Use Segments

On all bands except 6 metres there is a "General Use" segment im- mediately above the beacon segment. This is used for any pur- pose, such as local or club nets, experimental work, liaison etc On some bands this segment may include frequencies reserved for Packet Radio, CW practice beacons and other uses.

### NARROW-BAND SEGMENTS:

Fig. 1 2M - 13 CM Bands

| | |
|---|---|
| .000 - 100 | DX ONLY |
| .000 - 100 | EME |
| 100 .400 | TERRESTRIAL |
| 100 | Primary (DX) calling freq |
| .200 | Secondary (local) calling freq |
| 400 - 500 | BEACONS primary |
| .500 .600 | BEACONS secon- dary |
| 600 - .000 | GENERAL USE, NB modes |

# WIA Divisional Bookshops

**The following items are available from your Division's Bookshop (see the WIA Divisions Directory on page 3 for the address of your Division)**

| | Ref | Price to Members |
|---|---|---|
| **ANTENNA BOOKS** | | |
| Ant. Compendium Vol 2 Software only | BX293 | [illegible] |
| Antenna Compendium Vol 1 ARRL | [illegible] | [illegible] |
| Antenna Compendium Vol 2 & Software ARRL | BX294 | [illegible] |
| Antenna Compendium Vol 2 ARRL | BX292 | $21.60 |
| Antenna Handbook -Orr | BX217 | $15.57 |
| Antenna mpedance Matching - ARRL | BX257 | $27.00 |
| Antenna Note Book W1FB ARRL | BX179 | $18.00 |
| Antenna Pattern Worksheets Pkt of 10 - ARRL | BX211 | [illegible] |
| Antennas 2nd ed John Kraus | BX259 | $93.60 |
| Beam Antenna Handbook - New ED 1990 Orr | BX215 | $17.37 |
| Cubical Quad Antennas - Orr | BX214 | $13.05 |
| HF Antennas - Moxon RSGB | BX188 | [illegible] |
| Novice Antenna Notebook DeMaw - ARRL | BX162 | $14.40 |
| Practical Wire Antennas - RSGB | BX296 | $25.20 |
| Reflections - Software 5 in disk | BX358 | [illegible] |
| Reflections - Transmission lines The Book - ARRL | [illegible] | [illegible] |
| Smith Chart Expanded Scale PK of 10 | BX903 | $5.94 |
| Smith Charts Stand Scale 1 SET Co-or PK of 10 | [illegible] | [illegible] |
| The Antenna Handbook - ARRL | BX161 | $32.40 |
| The Truth About CB Antennas - Orr | BX219 | $15.57 |
| Transmission Line Transformers - ARRL | BX329 | $36.00 |
| Vertical Antenna Handbook - Lee | BX284 | $16.65 |
| Vertical Antennas - Orr | BX220 | $14.27 |
| Yag Antenna Design - ARRL | BX164 | [illegible] |
| **ATV BOOKS** | | |
| Micro and Television Projects - BATC | BX272 | $9.45 |
| The ATV Compendium - BATC | BX270 | $15.75 |
| The Best Of CQ-TV - BATC | BX273 | $15.75 |
| The Slow Scan Companion - BATC | BX274 | $11.70 |
| TV For Amateurs - BATC | BX271 | $8.32 |
| **CALL BOOKS** | | |
| Radio Call Book International 1991 | BX339 | $56.25 |
| Radio Call Book North America 1991 | [illegible] | [illegible] |
| Radio Call Book Supplements 1991 Due June | BX364 | $15.75 |
| **FICTION** | | |
| CQ Brings Danger - ARRL | BX206 | [illegible] |
| CQ Ghost Ship - ARRL | BX204 | [illegible] |
| Death Valley QTH- ARRL | BX205 | [illegible] |
| Grand Canyon QSO - ARRL | BX207 | [illegible] |
| Murder By QRM - ARRL | BX208 | [illegible] |
| SOS At Midnight - ARRL | BX209 | [illegible] |
| Space Almanac - ARRL | BX299 | $36.00 |
| **HANDBOOKS** | | |
| 1991 ARRL Handbook | BX337 | [illegible] |
| Electronics Data Book - ARRL | BX201 | [illegible] |
| Motorola RF Device Data - 2 Volumes | BX47 | [illegible] |
| Operating Manual ARRL | BX192 | [illegible] |
| Operating Manual RSGB | BX359 | $25.20 |
| Radio Communication Handbook - RSGB | [illegible] | [illegible] |
| Radio Data Reference Book RSGB | BX189 | $32.40 |
| Radio Handbook 23rd edition - Bill Orr | BX224 | [illegible] |
| Radio Theory For Amateur Operators - Swainston | BX265 | $38.66 |
| **HISTORY** | | |
| 200 Meters and Down 1936 - ARRL | BX198 | [illegible] |
| 50 Years of the ARRL | BX196 | $7.20 |
| Big Ear - Autobiography Of John Kraus W8JK | BX363 | $11.25 |
| Golden Classics of Yesterday - Ingram | MFJ30 | [illegible] |
| Spark to Space ARRL 75th Anniversary | BX310 | $36.00 |

| | Ref | Price to Members |
|---|---|---|
| **INTERFERENCE BOOKS** | | |
| Interference Handbook - Nelson | BX181 | $16.02 |
| Radio Frequency Interference ARRL | BX186 | $8.55 |
| **MISCELLANEOUS** | | |
| Amidon Ferrite Complete Data Book | BX44 | $7.65 |
| Design Notebook W1FB - ARRL | BX357 | $18.00 |
| [illegible] | BX356 | $18.00 |
| Help For New Hams DeMaw ARRL | BX308 | $18.00 |
| Hints and Kinks 12th edition - ARRL | BX330 | $14.40 |
| Novice Notes, The Book - ARRL QST | BX298 | $10.80 |
| Passport to World Band Radio 1991 | BX346 | $30.60 |
| QRP Classics - ARRL QST | BX323 | $21.60 |
| [illegible] | BX170 | $10.80 |
| Radio Astronomy 2nd edition - John D Kraus | BX262 | $71.91 |
| Short Wave Propagation Handbook | BX268 | $16.65 |
| Shortwave Receivers Past and Present | BX253 | $15.84 |
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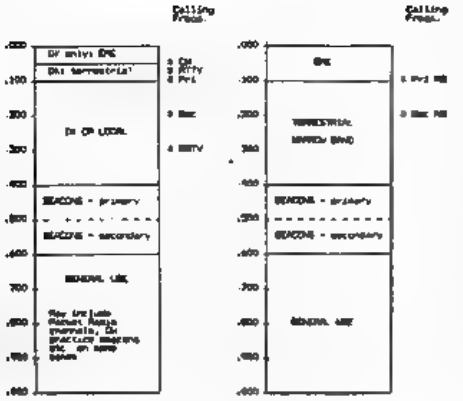
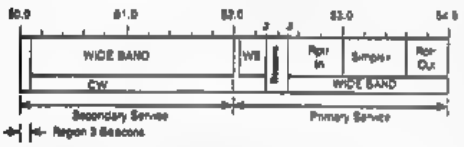
| **MORSE BOOKS** | | |
| Advanced Morse Tutor - 3.5 inch Disk | [illegible] | $27.00 |
| Advanced Morse Tutor - 5.25 inch Disk | BX326 | $27.00 |
| Morse Code 2 Tapes Novice Code Course - Gordon West | BX228 | $17.91 |
| Morse Code 6 Tapes 13-20 WPM Code Course - Gordon West | BX231 | $63.90 |
| Morse Code 6 Tapes 5-13 WPM Code Course - Gordon West | [illegible] | $63.90 |
| Morse Code 6 Tapes Novice Code Course - Gordon West | BX229 | [illegible] |
| Morse Code Tapes Set 1 5-10 WPM - ARRL | [illegible] | $16.65 |
| Morse Code Tapes Set 2: 10-15 WPM - ARRL | BX332 | [illegible] |
| Morse Code Tapes Set 3: 15-22 WPM - ARRL | BX333 | [illegible] |
| Morse Code Tapes Set 4 13-14 WPM - ARRL | [illegible] | $16.65 |
| Morse Code The Essential Language - ARRL | BX223 | $9.00 |
| Morse Tutor 5.25 inch IBM Disk | BX187 | $18.00 |
| **OPERATING** | | |
| Amateur Radio Awards Book - RSGB | BX297 | $27.00 |
| DXCC Companion | BX345 | $10.80 |
| Low Band DXing - John Devoldere | [illegible] | $18.00 |
| Maidenhead Locator-Grid Atlas - ARRL | BX197 | $9.00 |
| Prefix Map - The World Flat on Heavy Paper | BX335 | $14.40 |
| Prefix Map of North America | BX235 | $7.20 |
| Prefix Map of The World | BX234 | $7.20 |
| Radio Amateurs World Map | BX236 | $7.20 |
| The Complete DXer - Bob Locher | BX194 | $18.00 |
| Transmitter Hunting - TAB | BX222 | $32.31 |
| **PACKET RADIO BOOKS** | | |
| AX.25 Link Layer Protocol - ARRL | BX178 | $14.40 |
| Computer Networking Con (Packet) | | |
| Computer Networking Con (Packet) No 5 1986 - ARRL | BX167 | $18.00 |
| Computer Networking Con (Packet) No 6 1987 - ARRL | BX168 | $18.00 |
| Computer Networking Con (Packet) No 7 1988 - ARRL | BX184 | $22.50 |
| Computer Networking Con (Packet) No 8 1989 - ARRL | BX295 | $21.60 |
| Computer Networking Con (Packet) No 9 1990 - ARRL | BX360 | $21.60 |
| Computer Networking Conf (Packet) 1-4 1982/5 | BX166 | $32.40 |
| Gateway to Packet Radio 2nd edition ARRL | BX169 | $21.60 |
| Packet Radio Made Easy - Rogers | MFJ32 | $18.45 |
| Packet Users Notebook - Rogers | BX285 | $16.65 |
| **SATELLITE BOOKS** | | |
| Oscar Satellite Review - Ingram | [illegible] | $15.30 |
| Satellite AMSAT-NA 5th Symposium 1987 - ARRL | BX182 | $15.75 |
| Satellite AMSAT-NA 6th Symposium - ARRL | BX199 | $15.75 |
| Satellite Anthology - ARRL | [illegible] | $14.40 |

**Not all items listed above are available from all Divisions (and none are available from the Executive Office).**
**If the item is carried by your Divisional Bookshop, but is not in stock, your order wil be taken and filled as soon as practicable.**
**All prices are for WIA members only – postage and packing, if applicable, is extra.**
**All orders must be accompanied by a remittance.**



## The 6 Metre Band: 50 - 54 MHz

Allocations in this band are as follows:
50-52 MHz: Broadcasting primary service, Amateur secondary (see Note 1)
52-54 MHz: Amateur primary service.



| | |
|---|---|
| 50.000 - 52.000 | RESTRICTED USE SEGMENT (Note 1) |
| 50.000 - 50.100 | CW only |
| 50.100 - 52.000 | CW/Phone |
| 50.110 | International DX Calling Frequency |
| 50.250 - 50.300 | Beacons (VK6/8/9 only - Note 2) |
| 52.000 - 52.500 | NARROW BAND MODES |
| | DX only: EME |
| | DX only: CW |
| 52.025 | CW calling frequency |
| 52.050 - 52.100 | DX only: Phone/CW |
| 52.050 | DX M/S calling frequency |
| 52.075 | RTTY (FSK) calling frequency |
| 52.100 - 52.300 | General CW/Phone |
| 52.100 | Calling Frequency (primary national) |
| 52.200 | Calling Frequency (secondary national) |
| 52.300 | Calling Frequency SSTV |
| 52.300 - 52.400 | Beacons secondary segment (Note 2) |
| 52.400 - 52.500 | Beacons primary segment (Note 2) |
| 52.500 - 52.600 | FM SIMPLEX AND REPEATERS |
| 52.525 | International FM Simplex Calling Frequency |
| 52.550 - 52.975 | Repeater inputs (Note 3) |
| 53.000 - 53.100 | Simplex data transmission |
| 53.000 | BBS forwarding |
| 53.025 | General use |
| 53.050 | General use |
| 53.075 | General use |
| 53.100 | General use |
| 53.125 - 53.525 | Simplex voice |
| 53.500 | National voice calling frequency |
| 53.550 - 54.000 | Repeater outputs (Note 3) |

### Note 1: 50 - 52 MHz Operating Conditions

This portion of the band is allocated on a primary basis to the Broadcasting Service and on a secondary basis to the Amateur Service. DoTC permits amateur stations to operate within this band under the following conditions:

(a) No interference is caused to the reception of Channel 0 transmissions;

(b) In New South Wales, Victoria, Queensland and Tasmania, operation is restricted to:

(i) The sub-band 50.05 - 50.20 MHz;

(ii) Emission mode 200HA1A with a maximum transmitter power of 100 watts pY;

(iii) Emission mode 4K00J3E with a maximum transmitter power of 100 watts pX.

(c) In the Australian Capital Territory, operation is restricted to:

(i) The sub-band 50.05 - 50.20 MHz;

(ii) Emission mode 200HA1A with a maximum transmitter power of 100 watts pY;

(iii) Emission mode 4K00J3E with a maximum transmitter power of 100 watts pX.

### Note 2: Beacon Operation

Beacon frequencies on 52 MHz are allocated in accordance with the beacon plan on a state basis, i.e. VK1: 52.410 - 52.419, VK2: 52.420 - 52.429 etc. The current 5 kHz channelling provides four channels per call area.

Beacons within the 50 MHz "DX window" (50.050 - 50.200) are con- fined to time sharing on 50.056 MHz (north of the Tropic of Capricorn) and 50.066 MHz (south of the Tropic of Capricorn).

Continuous duty beacons in VK5/6/8/9 may operate outside the 50.050 - 50.200 MHz segment. The following plan was adopted for such beacons in October 1990:

| VK5 | VK6: | VK7: | VK8: | VK9: |
|---|---|---|---|---|
| 50.250 | 50.260 * | 50.270 | # 50.280 * | 50.290 |
| 50.252 * | 50.262 | 50.272 * | # 50.282 | 50.292 * |
| 50.254 | 50.264 * | 50.274 | # 50.284 * | 50.294 |
| 50.256 * | 50.266 | 50.276 * | # 50.286 | 50.296 * |
| 50.258 | 50.268 * | 50.278 | # 50.288 * | 50.298 |

* Channels at 4 kHz increments to be allocated first.

# This segment (not of course available in VK7) to be used if needed for beacons in other call areas.

## Note 3: Repeaters

The repeater split is 1 MHz and the channel spacing is 25 kHz. Seven repeater channels are allocated for exclusive use in the following call areas:

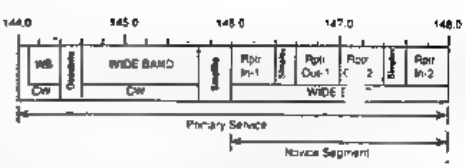
| | | | |
|---|---|---|---|
| VK1 | 52.70 | / 53.70 | |
| VK2: | 52.85 | / 53.85 | |
| VK3: | 52.90 | / 53.90 | |
| VK4: | 52.95 | / 53.96 | |
| VK5: | 52.75 | / 53.75 | |
| VK6: | 52.80 | / 53.80 | |
| VK7: | 52.65 / 53.65 | | |
| VK8: | as for VK5 | | |

The remaining channels are available for use in any call area. Repeater channel allocations are co-ordinated nationally to reduce the possibility of interstate sporadic E interference.

## The 2 Metre Band: 144 - 148 MHz

This band is allocated to the Amateur Service on a primary basis, and the Amateur Satellite Service is also allocated 144 - 146 MHz. Novices have the use of 146 - 148 MHz for 16K0F3E (FM) emissions only.

| | |
|---|---|
| 144.000 - 144.600 | NARROW BAND MODES |
| 144.000 - 144.050 | DX only: EME |
| 144.050 - 144.100 | DX only: Terrestrial |



| | | |
|---|---|---|
| 144.050 | | CW calling frequency |
| 144.075 | | RTTY (FSK) calling frequency |
| 144.100 | 144.400 | General CW/Phone |
| 144.100 | | Calling Frequency: primary nationa. |
| 144.200 | | Calling Frequency: secondary national |
| 144.300 | | Calling Frequency: SSTV |
| 144.400 | 144.500 | Beacons primary segment |
| 144.500 | 144.600 | Beacons secondary segment |
| 144.600 | 145.700 | GENERAL USE all modes |
| 144.700 | 144.925 | Packet Radio 10 channels at 25 KHz spacing |
| 144.950 | 144.975 | CW Practice Beacons 2 channels |
| 145.700 | 146.000 | AMATEUR SATELLITES |
| 146.000 | 148.000 | FM SIMPLEX AND REPEATERS (Notes 1, 2, 3) |
| 146.025 | 146.400 | Repeater inputs group A |
| 146.425 | 146.600 | Simplex (Note 4) |
| 146.625 | 147.000 | Repeater outputs - group A |
| 147.025 | 147.375 | Repeater outputs - group B |
| 147.400 | 147.600 | Simplex (Note 4) |
| 147.625 | 147.975 | Repeater inputs - group B |

### Note 1: FM Repeaters

Channel spacing is 25 KHz, and repeater offset is 600 KHz. In some areas it may be necessary to reverse repeater inputs and outputs in order to avoid interference from pagers.

### Note 2: Repeater Linking

Regulations require the use of tone access for 2 metre repeaters linked to repeaters in other bands, to prevent the possibility of Novice transmissions being relayed on frequencies they are not entitled to use. The following CTCSS tones have been adopted for repeater access:

123 Hz: For access to linked repeaters where CTCSS tone squelch is fitted as a means of preventing intermodulation interference.

141.3 Hz: For use by full or limited licensees to activate links to other VHF/UHF bands. This tone will also perform the same function as the 123 Hz tone.

### Note 3: Special Purpose Repeater Channels

The following repeater channels are reserved for special uses:

| | | |
|---|---|---|
| ATV liaison: | 147.300 MHz | |
| RTTY | 147.325 MHz | 147.350 MHz |

### Note 4: Special Purpose Simplex Channels

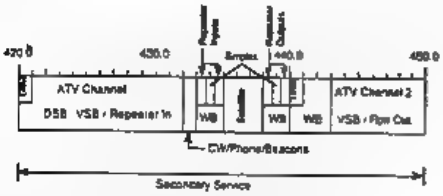
The following simplex channels are reserved for special uses:

| | |
|---|---|
| 146.450 | Primary national voice |
| 146.500 | National voice calling frequency (primary). |
| 146.550 | Primary national voice |
| 146.600 | RTTY |
| 147.400 | ATV liaison |
| 147.425 | ATV liaison |
| 147.450 | ATV/SSTV/FAX. |
| 147.475 | SSTV/FAX liaison. |
| 147.500 | National voice calling frequency (secondary) |
| 147.550 | Micro nets |
| 147.575 | Data/packet nets. |
| 147.600 | Data/packet nets. |

## The 70 cm Band: 420 - 450 MHz

This band is allocated to the following services:

| Service | Band | Status |
|---|---|---|
| Radiolocation | 420 - 450 | Primary |
| Fixed, Mobile | 420 - 450 | Secondary |
| Amateur | 420 - 450 | Secondary Amateur |
| Satellite | 435 - 438 | Secondary |




| | |
|---|---|
| 420.000 - 421 000 | REPEATER LINKS - "A" pairs |
| 421 000- 431 950 | AMATEUR TELEVISION |
| Channel 1 - VSB/DSB (simplex or repeater in- put) | |
| 426.250 | Video carrier |
| 431 750 | Audio carrier |
| 431 950 - 432.600 | NARROW BAND MODES |
| 431 950 - 432 050 | DX only· EME |
| 432 050 - 432 100 | DX only· Terrestrial |
| 432.050 | CW calling frequency |
| 432.075 | RTTY (FSK) calling frequency |
| 432.100 - 432.400 | General CW/Phone |
| 432.100 | Calling Frequency· primary national |
| 432.200 | Calling Frequency· secondary national |
| 432.300 | Calling Frequency· SSTV |
| 432.400 - 432.500 | Beacons: primary segment |
| 432.500 - 432 600 | Beacons: secondary segment |
| 432.600- 433.000 | GENERAL USE· all modes |
| 433.000 - 435.000 | FM SIMPLEX AND REPEATERS (Notes 1 and 2) |
| 433.025 - 433.725 | Repeater inputs |
| 433.750 - 434.250 | Simplex (Note 3) |
| 434.275 - 434.975 | Repeater inputs |
| 435.000 - 438.000 | AMATEUR SATELLITES |
| 438.000 - 440.000 | FM SIMPLEX AND REPEATERS (Notes 1 and 2) |
| 438.025 - 438.725 | Repeater outputs |
| 438.750 - 439.250 | Simplex (Note 3) |
| 439.275 - 439 975 | Repeater outputs |
| 440.000 - 441 000 | REPEATER LINKS - "B" pairs |
| 441.000 443.000 | WIDE BAND & EXPERIMENTAL all modes |
| 443.000 - 450.000 | AMATEUR TELEVISION Channel 2 - VSB (simplex or repeater output) |
| 444.250 | Video carrier |
| 449 750 | Audio carrier |

### Note 1: Repeater Operation

Channel spacing is 25 KHz, and repeater offset is 5 MHz. For details of repeater linking tone access, see Note 2 for the 2 metre band.

### Note 2: Special Purpose Repeater Channels

The following repeater channels are reserved for special uses:

| | | | | |
|---|---|---|---|---|
| Mobile voice primary· | 438.525 | | | |
| Mobile voice secondary· | | | | |
| | 438.075 | 438.225 | | |
| | 438.375 | 438.675 | | |
| Mobile voice (other) | 438.025 | 438.175 | 438.325 | 438.425 |
| | 438.475 | 439.275 | 439.425 | 439.575 |
| | 439.725 | 439.875 | | |
| WICEN portable: | 438.275 | 438.625 | | |
| RTTY· | 438 125 | 438.725 | 439.325 | 439.475 |
| Data | 438.575 | | | |
| SSTV· | 439.975 | | | |

### Note 3: Special Purpose Simplex Channels

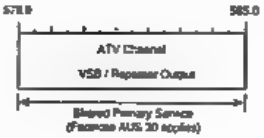
The following simplex channels are reserved for special uses:

| | | | | |
|---|---|---|---|---|
| National voice call channel | 439.000 | | | |
| Secondary voice channels: | 438.825 | 439.125 | | |
| WICEN | 438.[illegible] | | | |
| RTTY· | 438.775 | | | |
| Data and Packet | 439.050 | 439.075 | 439.200 | 439.225 |
| | 439.250 | 434.050 | 434.075 | 434.200 |
| | 434.225 | 434.250 | | |
| SSTV· | 438.925 | | | |

### The 50 cm Band: 576 - 585 MHz

Only existing ATV repeaters will be permitted in this band following its withdrawal from the Amateur Service in 1989.

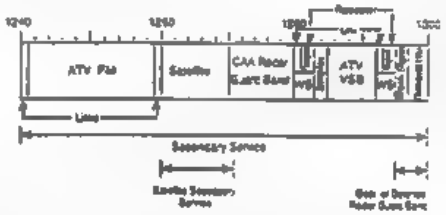
| | |
|---|---|
| 578.000 - 585.000 | AMATEUR TELEVISION, VSB repeater output |
| 579.250 | Vision carrier 584.750 [illegible] |




## The 23 Cm Band: 1240 - 1300 MHz

This band is allocated to the following services:

| Service | Band | Status |
|---|---|---|
| Radiolocation | 1240-1300 | Primary |
| Radionavigation - Satellite | 1240-1260 | Primary |
| Amateur | 1240-1300 | Secondary |
| Amateur Satellite (uplinks) | 1260-1270 | Secondary |




| | |
|---|---|
| 1241 000- 1241 000 | REPEATER LINKS |
| 1241 000- 1258.000 | AMATEUR TELEVISION (Note 5) |
| 1258.000- 1260.000 | REPEATER LINKS |
| 1260.000- 1270.000 | AMATEUR SATELLITES (uplinks only) |
| 1270.000- 1280.000 | GENERAL USE (Radar guard band - Note 1) |
| 1280.000- 1281 975 | REPEATER LINKS |
| 1281.000- 1285.000 | FM SIMPLEX AND REPEATERS |
| 1281.000- 1283.975 | Repeater outputs (Note 2) |
| 1283.000- 1283.975 | Simplex - Digital and Packet Radio (Note 4) |
| 1284.000- 1284.975 | Simplex· Voice (Note 3) |
| 1285.000- 1292.000 | AMATEUR TELEVISION - VSB AM [illegible] |
| 1286.250 | Video carrier |
| 1291 750 | [illegible] |
| 1292 000- 1293.975 | REPEATER LINKS |
| 1293.000- 1294.975 | FM REPEATER INPUTS (Note 2) |
| 1295.000- 1297 000 | NARROW BAND MODES (Radar guard band· Note 1) |
| 1295.900- 1296.050 | DX only· EME |
| 1296.050- 1296.100 | DX only· Terrestrial |
| 1296.050 | CW calling frequency |
| 1296.075 | RTTY (FSK) calling frequency |
| 1296.100- 1296.400 | General Phone/CW |
| 1296.100 | Calling frequency· primary national |
| 1296.200 | Calling frequency· secondary national |
| 1296.300 | Calling frequency· SSTV |
| 1296.400- 1296.500 | Beacons· primary segment |
| 1296.500- 1296.600 | Beacons· secondary segment |
| 1296.600- 1297.000 | General use, all narrow band modes |
| 1297.000- 1300.000 | ALL MODES (Note 1) |

### Note 1: Radar Guard Bands

Some Department of Aviation RADARS are centred on 1275.0 and 1305.0 MHz, while some Department of Defence RADARs are centred on 1300.0 MHz. Accordingly the frequencies 1270 - 1280 MHz and 1295 - 1300 MHz are allocated as guard bands. The Department of Aviation RADARS on 1275 MHz are to phased out by 1992.

### Note 2: FM Repeater Operation

Channel spacing is 25 KHz, and repeater offset is 12 MHz. Certain channels are reserved for particular uses as follows:

| | | | | |
|---|---|---|---|---|
| Mobile Voice· | ll multiples of 100 KHz from 1281 1001 o 1283.000. | | | |
| Primary· | 1281 500 | | | |
| Secondary· | 1281 400 | 1281.600 | | |
| RTTY· | 1281.050 | 1281 150 | 1282.150 | 282.250 |
| Data: | 1281.250 | 1281.350 | 1282.350 | |
| 1282 450 | | | | |
| ATV Liaison | 1281 850 | 1281 950 | | |

Other channels may be used for any purpose. It is suggested that the channels 1282.500 - 1282.975 and 1293.500 - 1283.975 be reserved for possible use by linear transponders.

### Note 3: FM Simplex Channels

Channel spacing is 25 kHz. Channel allocation is as follows:

1284.000 1284.075
RTTY 4 channels
1284.100 1284.175
ATV liaison/SSTV 4 channels
1284.200 - 1284.775
General voice 24 channels
1284 500
Primary calling frequency
1284.800 1284.875
Local, club or special purpose nets
1284.900 - 1284.975
WICEN

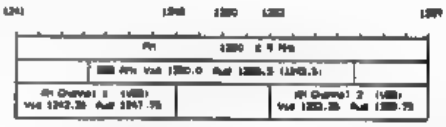
### Note 4: Digital and Packet Radio

Channel allocations will be finalised after discussion with packet radio groups. A tentative allocation is:

1283.100 - 1283.500
Speeds over 9600 baud
5 channels at 100 kHz spacing
1283.600 - 1283.975
Speeds up to 9600 baud
16 channels at 25 kHz spacing

### Note 5: Recommended ATV Frequencies

The 1241 - 1259 MHz segment can be used for FM ATV (video carrier 1250 MHz) or for AM operation. Suggested uses of this segment are:




The 1285 - 1292 MHz channel is suitable for VSB AM only.

## The 13 Cm Band: 2300 - 2450 MHz

This band is allocated to the following services:

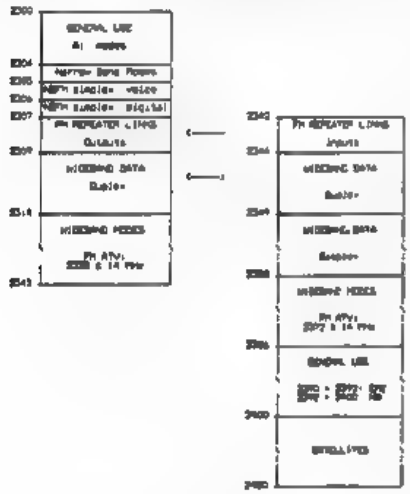
| Service | Band | Status |
|---|---|---|
| Fixed, Mobile | 2300 - 2450 | Primary |
| Radiolocation | 2300 - 2450 | Primary |
| Industrial/Scientific/Medical | 2400 - 2450 | |
| Primary Amateur | 2300 - 2450 | Secondary |
| Amateur Satellite | 2400 - 2450 | Secondary |

The band also contains MDS television links, with channels at 7 MHz spacing on centre frequencies from 2305.5 MHz to 2396.5 MHz. The first six channels (effectively 2302 - 2344 MHz) are unallocated but are reserved for future use.

The following band plan is proposed for adoption in February 1991

| | |
|---|---|
| 2300.000- 2303.900 | GENERAL USE· all modes |
| 2303 900- 2305.000 | NARROW BAND MODES |
| 2303.900- 2304 050 | DX only· EME |
| 2304 050- 2304 100 | DX only· Terrestrial |

| | | |
|---|---|---|
| 2304.050 | | CW calling frequency |
| 2304.075 | | RTTY (FSK) calling frequency |
| 2304.100 - | 1296.400 | General Phone/CW |
| 2304.100 | | Calling frequency: primary national |
| 2304.200 | | Calling frequency: secondary national |
| 2304.400 | 2304.500 | Beacons, primary segment |
| 2304.500 | 2304.600 | Beacons, secondary segment |
| 2304.600 - | 2305.000 | General use, all narrow band modes |
| 19 2305.000 - | 2306.000 | FM SIMPLEX - voice<br>25 KHz channeling |
| 2306.000 - | 2307.000 | FM SIMPLEX - digital 25 KHz channelling |
| 2307.000 - | 2309.000 | FM REPEATER LINK OUTPUTS<br>35 MHz offset |
| 2309.000 - | 2314.000 | WIDEBAND MODES |
| 2309.000 - | 2314.000 | Data: duplex 35 MHz offset |
| 2314.000 - | 2342.000 | FM ATV Channel 1<br>2328 +/- 14 MHz |
| 2342.000 - | 2344.000 | FM REPEATER LINK INPUTS<br>35 MHz offset |
| 2344.000 - | 2386.000 | WIDEBAND MODES |
| 2344.000 - | 2349.000 | Data: duplex 35 MHz offset |
| 2349.000 - | 2358.000 | Data: simplex |
| 2358.000 - | 2386.000 | FM ATV Channel 2 2372 +/- 14 MHz |
| 2386.000 - | 2400.000 | GENERAL USE all modes |
| 2390.000 - | 2392.000 | Region 1 EME window |
| 2392.000 | 2400.000 | Narrow band modes: segment to be adopted consistent with proposed Region 1/2 NB segment. |
| 2400.000 | 2450.000 | AMATEUR SATELLITES (downlinks) |



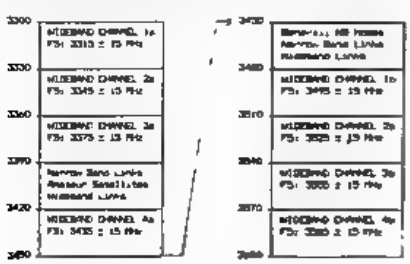
## The 9 cm Band: 3300 - 3600 MHz

This band is allocated to the following services:

| Service | Band | Status |
|---|---|---|
| Radiolocation | 3300 - 3600 | Primary<br>Amateur |
| | 3300 3600 | Secondary |
| Amateur Satellite (Regions 2 & 3) | 3400 - 3410 | Secondary |
| Fixed Satellite (space to earth) | 3400 3600 | Secondary |
| Fixed | 3400 - 3600 | Secondary |
| Mobile | 3400 3600 | Secondary |

The scope of amateur activity in this band is limited by the need to avoid interference to other services. A large portion of the band is allotted to wideband "channels" each 30 MHz wide, for FM ATV and other wideband uses. These channels can be paired for duplex operation with IF frequencies at any multiple of 30 MHz up to 180 MHz.

The following band plan is proposed for adoption in February 1991



| | | |
|---|---|---|
| 21 3300.000 - | 3400.000 | WIDEBAND MODES |
| 3300.000 - | 3330.000 | Wideband channel 1a 3315 ± 15 MHz |
| 3330.000 - | 3360.000 | Wideband channel 2a 3345 ± 15 MHz |
| 3360.000 - | 3390.000 | Wideband channel 3a 3375 ±15 MHz |
| [redacted] | | FM LINKS narrow band 70 MHz offset |
| 3400.000 - | 3410.000 | AMATEUR SATELLITES (Regions 2 and 3) |
| 3410.000 - | 3440.000 | WIDEBAND MODES |
| 3410.000 - | 3420.000 | Links 60 MHz offset |
| 3420.000 - | 3450.000 | Wideband channel 4a 3435 ±15 MHz |
| 3450.000 - | 3455.900 | General use |
| 3455.900 - | 3457.000 | NARROW BAND MODES |
| 3455.900 - | 3456.100 | EME only |
| 3456.100 - | 3456.400 | Terrestrial |
| 3456.100 | | Calling frequency: all mode primary/ DX |
| 3456.200 | | Calling frequency: all mode secondary/ local |
| 3456.400 | 3456.500 | Beacons: primary segment |
| 3456.500 - | 3456.600 | Beacons: secondary segment |
| 3456.600 | 3457.000 | General use, all narrow band modes |
| 3457.000 | 3458.000 | FM SIMPLEX - voice |
| 3458.000 - | 3460.000 | FM SIMPLEX - digital |
| 3460.000 | 3470.000 | FM LINKS narrow band 70 MHz offset |
| 3470.000 | 3600.000 | WIDEBAND MODES |
| 3470.000 | 3480.000 | Links: 60 MHz offset |
| 3480.000 - | 3510.000 | Wideband channel 1b 3495 ± 15 MHz |
| 3510.000 - | 3540.000 | Wideband channel 2b 3525 ± 15 MHz |
| 3540.000 - | 3570.000 | Wideband channel 3b 3555 ± 15 MHz |
| 3570.000 - | 3600.000 | Wideband channel 4b 3585 ± 15 MHz |

## The 6 cm Band: 5650 - 5850 MHz

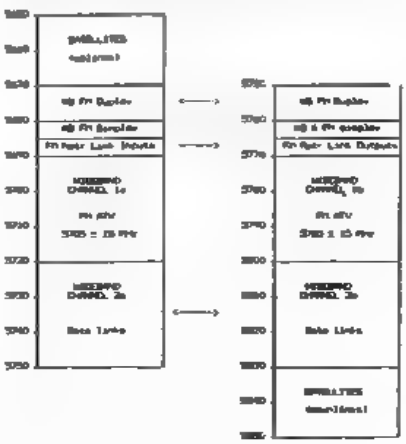
This band is allocated to the following services:

| Service | Band | Status |
|---|---|---|
| Radiolocation | 5650 - 5850 | Primary |
| Amateur | 5650 - 5850 | Secondary |
| Space Research (deep space) | 5650 5725 | Secondary |

Two 20 MHz [redacted] are allotted for amateur satellites. 5650 - 5670 MHz for uplinks and 5830 - 5850 MHz for downlinks. Amateur stations are required to accept any harmful interference that may be experienced from the operation of industrial, scientific or medical (ISM) equipment.

The following band plan is proposed for adoption in February 1991. It incorporates a narrow band segment at 5760 MHz, and makes provision for four wideband segments, each 30 MHz wide with 60 MHz separation.

| | | |
|---|---|---|
| 5650.000 - | 5670.000 | AMATEUR SATELLITES (uplinks) |
| 5670.000 | 5760.000 | WIDEBAND MODES (note 1) |
| 5670.000 | 5680.000 | FM duplex 60 MHz offset |
| 5680.000 | 5685.000 | FM simplex |
| 5685.000 | 5690.000 | FM REPEATER LINK IN- PUTS 60 MHz offset |
| 5690.000 | 5760.000 | WIDEBAND MODES |
| 5690.000 | 5720.000 | Channel 1a: FM ATV 5705 ±15 MHz |
| 5720.000 | 5750.000 | Channel 2a: Data links 5735 ±15 MHz |
| 5750.000 | 5760.000 | FM duplex 60 MHz offset |
| 5759.900 | 5761.000 | NARROW BAND MODES |
| 5759.900 - | 5760.100 | EME only |
| 5760.100 - | 5760.400 | Terrestrial |
| 5760.100 | | Calling frequency: all mode primary/ DX |
| 5760.200 | | Calling frequency: all mode secondary/ local |
| 5760.400 - | 5760.500 | Beacons: primary segment |
| 5760.500 | 5760.600 | Beacons: secondary segment |
| 5760.600 | 5761.000 | General use, all narrow band modes |
| 5761.000 | 5763.000 | FM SIMPLEX narrow band voice |
| 5763.000 | 5765.000 | FM SIMPLEX narrow band digital |
| 5765.000 | 5770.000 | FM REPEATER LINK OUTPUTS 60 MHz offset |
| 5770.000 | 5830.000 | WIDEBAND MODES |
| 5770.000 - | 5800.000 | Channel 1b: FM ATV 5785 ±15 MHz |
| 5800.000 - | 5830.000 | Channel 2b: Data links 5815 ± 15 MHz |
| 5830.000 - | 5850.000 | AMATEUR SATELLITES (downlinks) |



Note 1: Possible future NB segment in the 5670 MHz region to conform to Region 1 proposal.

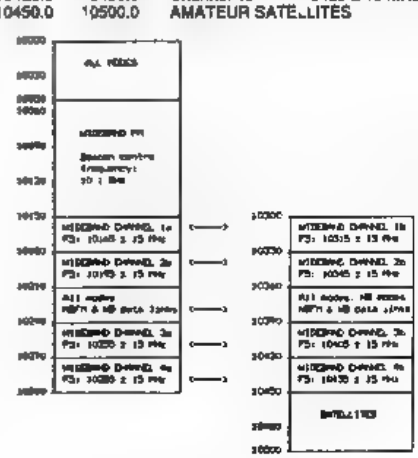
## The 3 cm Band: 10 - 10.5 GHz

This band is allocated to the following services:

| Service | Band | Status |
|---|---|---|
| Radiolocation | 10.0 10.5 GHz | Primary |
| Amateur | 10.0 - 10.5 GHz | Secondary |
| Amateur Satellite | 10.45 10.5 GHz | Secondary |

The following band plan is proposed for adoption in February 1991. It makes provision for a narrow band modes segment, on the pattern of the lower bands, beginning at 10368 MHz, and segments for repeater and data links. There is also a series of channels, each 30 MHz wide, for wideband video, voice or data uses. These channels can be used for simplex operation or paired for duplex operation with IF frequencies at any multiple of 30 MHz up to 150 MHz. An IF in the 144-148 MHz band is also possible using a 150 MHz spaced channel pair. Very wide band systems (± 30 MHz) could operate on 10180, 10270, 10330 or 10420 MHz.

| | | |
|---|---|---|
| 10000.0 - | 10050.0 | ALL MODES |
| 10050.0 | 10150.0 | WIDEBAND FM |
| 10100.0 | | Centre frequency for wideband beacon [redacted] |
| 10150.0 | 10210.0 | WIDEBAND MODES |
| 10150.0 | 10180.0 | Channel 1a 10165 ± 15 MHz |
| 10180.0 | 10210.0 | Channel 2a 10195 ± 15 MHz |
| 10210.0 - | 10225.0 | ALL MODES |
| 10225.0 - | 10230.0 | NBFM REPEATER LINK IN- PUTS [redacted] |
| 10230.0 - | 10240.0 | WIDEBAND DATA - duplex 150 MHz offset |
| 10240.0 | 10360.0 | WIDEBAND MODES |
| 10240.0 - | 10270.0 | Channel 3a 10255 ± 15 MHz |
| 10270.0 | 10300.0 | Channel 4a 10285 ± 15 MHz |
| 10300.0 - | 10330.0 | Channel 1b 10315 ± 15 MHz |
| 10330.0 - | 10360.0 | Channel 2b 10345 ± 15 MHz |
| 10360.0 - | 10368.0 | ALL MODES |
| 10368.0 - | 10370.0 | NARROW BAND MODES |
| 10368.0 | ± 100 kHz | EME only |
| 10368.1 - | 10368.4 | Terrestrial |
| 10368.1 | | Calling frequency: all mode primary/ DX |
| 10368.2 | | Calling frequency: all mode secondary/ local |
| 10368.5 | ± 100 kHz | Beacons |
| 10368.6 - | 10370.0 | General use, all narrow band modes |
| 10370.0 | 10372.0 | NBFM SIMPLEX - voice |
| 10372.0 - | 10375.0 | NBFM SIMPLEX digital |
| 10375.0 - | 10380.0 | NBFM REPEATER LINK OUTPUTS 150 MHz offset |
| 10380.0 | 10390.0 | WIDEBAND DATA duplex 150 MHz offset |
| 10390.0 | 10450.0 | WIDEBAND MODES |
| 10390.0 | 10420.0 | Channel 3b 10405 ± 15 MHz |
| 10420.0 | 10450.0 | Channel 4b 10435 ± 15 MHz |
| 10450.0 | 10500.0 | AMATEUR SATELLITES |



# Australian Beacons

**Please advise any additions or corrections to the Chairman, WIA Federal Technical Advisory Committee, PO Box 300, Caulfield South, Vic 3162.**

| Freq | Call | Service Area | Loc | ST | N |
|---|---|---|---|---|---|
| **HF Bands** | | | | | |
| 3.599 | VK2RCW | Sydney | QF56 | O | (1) |
| 28.260 | VK5WI | Adelaide | PF95 | O | |
| 28.262 | VK2RSY | Sydney | QF56 | O | |
| 28.264 | VK6RWA | Perth | OF78 | O | |
| 28.265 | VK4RIK | Cairns | QH23 | O | |
| 28.266 | VK6RTW | Albany | OF84 | O | |
| 28.268 | VK8VF | Darwin | PH57 | O | |
| 28.270 | VK4RTL | Townsville | QH30 | O | |
| **6 Metre Band** | | | | | |
| 50.043 | VK6RAS | Alice Springs | PG66 | ? | (3) |
| 50.056 | VK8VF | Darwin | PH57 | O | |
| 50.066 | VK6RPR | Perth | OF78 | O | |
| 52.200 | VK8VF | Darwin | PH57 | O | |
| 52.300 | VK2RBH | Broken Hill | QF06 | P | |
| 52.320 | VK6RTT | Wickham | OG89 | O | |
| 52.325 | VK2RHV | Newcastle | QF57 | O | |
| 52.330 | VK3RGL | Geelong | QF22 | O | |
| 52.345 | VK4ABF | Longreach | QG26 | O | |
| 52.350 | VK6RTU | Kalgoorlie | PF09 | ? | |
| 52.370 | VK7RST | Hobart | QE37 | O | |
| 52.410 | VK1RCC | Canberra | QF44 | O | |
| 52.420 | VK2RSY | Sydney | QF56 | O | |
| 52.425 | VK2RGB | Gunnedah | QF59 | O | |
| 52.435 | VK3RMV | Hamilton | QF12 | ? | |
| 52.440 | VK4RTL | Townsville | QH30 | O | |
| 52.445 | VK4RIK | Cairns | QH23 | O | |
| 52.450 | VK5VF | Adelaide | PF95 | O | |
| 52.460 | VK6RPH | Perth | OF78 | O | |
| 52.465 | VK6RTW | Albany | OF84 | O | |
| 52.470 | VK7RNT | Launceston | QE38 | O | |
| 52.485 | VK8RAS | Alice Springs | PG66 | O | (3) |
| **2 Metre Band** | | | | | |
| 144.022 | VK6RBS | Busselton | OF76 | O | |
| 144.400 | VK4RTT | Toowoomba | QG62 | O | |
| 144.410 | VK1RCC | Canberra | QF44 | O | |
| 144.420 | VK2RSY | Sydney | QF56 | O | |
| 144.430 | VK3RTG | Melbourne | QF22 | O | |
| 144.435 | VK3RMV | Hamilton | QF12 | ? | |
| 144.445 | VK4RIK | Cairns | QH23 | O | |
| 144.445 | VK4RTL | Townsville | QH30 | O | |
| 144.450 | VK5VF | Adelaide | PF95 | P | (4) |
| 144.465 | VK6RTW | Albany | OF84 | O | |
| 144.470 | VK7RMC | Launceston | QE38 | O | |
| 144.480 | VK8VF | Darwin | PH57 | O | |
| 144.485 | VK8RAS | Alice Springs | PG66 | O | |
| 144.530 | VK3RGG | Geelong | QF22 | ? | |
| 144.535 | VK3RGI | Gippsland | | L | |
| 144.550 | VK5RSE | Mt Gambier | QF02 | O | |
| 144.600 | VK6RTT | Wickham | OG89 | ? | |
| 144.800 | VK5VF | Adelaide | PF95 | O | (4) |
| 144.950 | VK2RCW | Sydney | QF56 | O | (2) |
| 144.950 | VK3RCW | Melbourne | QF22 | O | (2) |
| 145.000 | VK6RPH | Perth | OF78 | O | |
| **70 cm and Higher Bands** | | | | | |
| 432.066 | VK6RBS | Busselton | OF76 | ? | |
| 432.160 | VK6RPR | Perth | OF78 | O | |
| 432.410 | VK1RBC | Canberra | QF44 | O | |
| 432.410 | VK6RTT | Wickham | OG89 | ? | |
| 432.420 | VK2RSY | Sydney | QF56 | O | |
| 432.430 | VK3RTG | Melbourne | QF22 | L | |
| 432.435 | VK3RMV | Hamilton | QF12 | ? | |
| 432.440 | VK4RSD | Brisbane | QG62 | O | |
| 432.445 | VK4RIK | Cairns | QH23 | O | |
| 432.445 | VK4RTL | Townsville | QH30 | O | |
| 432.450 | VK3RAL | Melbourne | QF22 | O | |
| 432.465 | VK6RTW | Albany | OF84 | ? | |
| 432.530 | VK3RGL | Geelong | QF22 | T | |
| 432.535 | VK3RMB | Ballarat | QF12 | O | |
| 432.545 | VK4RAR | Rockhampton | | QG56 | O |
| 432.565 | VK6RTU | Kalgoorlie | PF09 | ? | |
| 1296.198 | VK6RBS | Busselton | OF76 | O | |
| 1296.410 | VK1RBC | Canberra | QF44 | O | |
| 1296.420 | VK2RSY | Sydney | QF56 | O | |
| 1296.440 | VK4RSD | Brisbane | QG62 | O | |
| 1296.445 | VK4RIK | Cairns | QH23 | O | |
| 1296.460 | VK6RPR | Perth | OF78 | O | |
| 2304.420 | VK2RSY | Sydney | QF56 | P | |
| 2304.445 | VK4RIK | Cairns | QH23 | O | |
| 2308.440 | VK4RSD | Brisbane | QG62 | O | |
| 10300.0 | VK6RLF | Perth | OF78 | ? | |
| 10368.0 | VK3RGZ | Melbourne | QF22 | T | |
| 10445.0 | VK4RIK | Cairns | QH23 | O | |

Notes (1) CW practice beacons.
(2) CW practice beacons - FM mode
(3) To move from 52.485 to 50.043.
(4) To move from 144.600 to 144.450 in late 1990

# ARRL DXCC Countries List

NOTE. *INDICATES CURRENT LIST OF COUNTRIES FOR WHICH QSLs MAY BE FORWARDED BY THE ARRL MEMBERSHIP OUTGOING QSL SERVICE
NOTE †INDICATES COUNTRIES WITH WHICH US AMATEURS MAY LEGALLY HANDLE THIRD-PARTY MESSAGE TRAFFICE
HOW TO USE THE ARRL OUTGOING QSL SERVICE
1) Present your DX QSLs alphabetically by callsign prefix (AP, C6, CE, DL, F, G, JA, LU, PY, 5N, 9Y and so on).
2) Enclose the address label from your current copy of *QST*. The label shows that you are a current ARRL member.
3) Enclose payment of $2 per pound of cards — approximately 150 cards weigh one pound. A package of ten (10) cards or less costs only $1. Please pay by cheque (or money order) and write your callsign on the cheque. Send "green stamps" (cash) at your own risk.
4) Include only the cards, address label and cheque in the package. Wrap the package securely and address it to the ARRL Outgoing QSL Service, 225 Main St, Newington, CT 06111.
5) Further details are available from the Outgoing QSL Bureau at ARRL HQ.

| Prefix | Country |
|---|---|
| A2* | Botswana |
| A3* | Tonga |
| A4* | Oman |
| A5 | Bhutan |
| A6 | United Arab Emirates |
| A7 | Qatar |
| A9* | Bahrain |
| AP-AS* | Pakistan |
| BV | Taiwan |
| BY, BT* | China |
| C2* | Nauru |
| C3* | Andorra |
| C5†* | The Gambia |
| C6* | Bahamas |
| C8-9 | Mozambique |
| CA-CE† | Chile |
| CE9/KC4+* | Antarctica |
| CE0†* | Easter I |
| CE0†* | San Felix |
| CE0†* | Juan Fernandez |
| CM, CO†* | Cuba |
| CN* | Morocco |
| CP†* | Bolivia |
| CT* | Portugal |
| CT3* | Madeira Is |
| CU* | Azores |
| CV-CX†* | Uruguay |
| CY9* | St Paul I |
| CY0* | Sable I |
| D2-3* | Angola |
| D4* | Cape Verde |
| D6†‡ | Comoros |
| DA-DL†* | Fed Rep of Germany |
| DU-DZ* | Philippines |
| EA-EH* | Spain |
| EA6-EH6* | Balearic Is |
| EA8-EH8* | Canary Is |
| EA9-EH9* | Ceuta and Melilla |
| EI-3J* | Ireland |
| EL†* | Liberia |
| EP-EQ* | Iran |
| ET | Ethiopia |
| F* | France |
| FT8W* | Crozet |
| FT8X* | Kerguelen Is |
| FT8Z* | Amsterdam & St Paul Is |
| FG* | Guadeloupe |
| FJ, FS†* | Saint Martin |
| FH†* | Mayotte |
| FK* | New Caledonia |
| FM* | Martinique |
| FO* | Clipperton I |
| FO* | Fr Polynesia |
| FP* | St Pierre & Miquelon |
| FR/G** | Glorioso Is |
| FR/J,E** | Juan de Nova, Europa |
| FR* | Reunion |
| FR/T* | Tromelin |
| FW* | Wallis & Futuna Is |
| FY* | Fr Guiana |
| G*# | England |
| GD* | Isle of Man |
| GI* | Northern Ireland |
| GJ* | Jersey |
| GM* | Scotland |
| GU* | Guernsey & Dep |
| GW* | Wales |
| H4* | Solomon Islands |
| HA, HG* | Hungary |
| HB* | Switzerland |
| HB0* | Liechtenstein |
| HC-HD†* | Ecuador |
| HC8-HD8†* | Galapagos Is |
| HH†* | Haiti |
| HI†* | Dominican Republic |
| HJ-HK†* | Colombia |
| HKK0†* | Malpelo I |
| HK0†* | San Andreas & Providencia |
| HL* | Korea |
| HO-HP†* | Panama |
| HO-HR†* | Honduras |
| HS* | Thailand |
| HV* | Vatican |
| HZ | Saudi Arabia |
| I* | Italy |
| IS0, IM0* | Sardinia |
| J2* | Djibouti |
| J3†* | Grenada |
| J5 | Guinea-Bissau |
| J6†* | St Lucia |
| J7†* | Dominica |
| J8†* | St Vincent & Dep |
| JA-JS* | Japan |
| JD1§ | Minami Torishima |
| JD1§ | Ogasawara |
| JT-JV* | Mongolia |
| JW* | Svalbard |
| JX* | Jan Mayen |
| JY†* | Jordan |
| K, W, N, AA-AK* | United States of America |
| KC6‡‡(W | Caroline Is)Belau |
| KG4†* | Guantanamo Bay |
| KH1† | Baker, Howland Is |
| KH2†* | Guam |
| KH3† | Johnston I |
| KH4†* | Midway Is |
| KH5† | Palmyra, Jarvis Is |
| KH5K† | Kingman Reef |
| KH6†* | Hawaiian Is |
| KH7+ | Kure |
| KH8†* | American Samoa |
| KH9† | Wake Is |
| KH0†* | Mariana Is |
| KL7†* | Alaska |
| KP1†* | Navassa I |
| KP2†* | Virgin Is |
| KP4†* | Puerto Rico |
| KP5†*† | Desecheo Is |
| LA-LN* | Norway |
| LO-LW†* | Argentina |
| LX* | Luxembourg |
| LZ* | Bulgaria |
| OA-OC†* | Peru |
| OD* | Lebanon |
| OE* | Austria |
| OF-OI* | Finland |
| OH0* | Aland Is |
| OJ0* | Market Reef |
| OK-OM* | Czechoslovakia |
| ON-OT* | Belgium |
| OX* | Greenland |
| OY* | Faroe Is |
| OZ* | Denmark |
| P2†* | Papua New Guinea |
| P4*◊ | Aruba |
| PA-PI* | Netherlands |
| PJ2, 4, 9* | Bonaire, Curacao (Neth.Antilles) |
| PJ5-8* | St Maarten, Saba, St Eustatius |
| PP-PY†* | Brazil |
| PP0-PY0†* | Fernando de Noronha |
| PP0-PY0†* | St Peter & St Paul Rocks |
| PP0-PY0†* | Trindade & Martin Vaz Is |
| PZ* | Suriname |
| S2* | Bangladesh |
| S7* | Seychelles |
| S9 | Sao Tome & Principe |
| SO*‡‡ | Western Sahara |
| SA-SM* | Sweden |
| SN-SR* | Poland |

| | |
|---|---|
| ST* | Sudan |
| ST0* | Southern Sudan |
| SU* | Egypt |
| SV-SZ* | Greece |
| SV5* | Dodecanese |
| SV9* | Crete |
| SV/A* | Mount Athos |
| T2[46] | Tuvalu |
| T30 | Kiribati (Gilbert & Ocn Is) |
| T31 | C Kiribati (Brit Phoenix Is) |
| T32 | Eastern Kiribati (Line Is) |
| T33 | Banaba I |
| T5 | Somalia! |
| T7* | San Marino |
| TA-TC* | Turkey |
| TF* | Iceland |
| TG, TD† | Guatemala |
| TI, TE†* | Costa Rica |
| TI9† | Cocos I |
| TJ | Cameroon |
| TK* | Corsica |
| TL[8] | Central African Rep |
| TN* | Congo |
| TR[16] | Gabon |
| TT* | Chad |
| TU[24] | Ivory Coast |
| TY[13] | Benin |
| TZ[14] | Mali |
| UA1,3,4,6* | European Russian RSFSR |
| UA1* | Franz Josef Land |
| UA2* | Kaliningrad |
| UA9, 0* | Asiatic RSFSR |
| UB, UT, UY* | Ukraine |
| UC* | Byelorussia |
| UD* | Azerbaijan |
| UF* | Georgia |
| UG* | Armenia |
| UH* | Turkmenistan |
| UI* | Uzbekistan |
| UJ* | Tadzhikistan |
| UL* | Kazakhstan |
| UM* | Kirghizia |
| UO* | Moldavia |
| UP* | Lithuania |
| UQ* | Latvia |
| UR* | Estonia |
| VP† | Antigua & Barbuda |
| V3* | Belize |
| V4[18] | St Christopher & Nevis |
| V5 | (Namibia) SW Africa |
| V6[31] | (E Caroline Is) Micronesia |
| V7* | Marshall Islands |
| V8* | Brunei |
| VE, VO, VY†* | Canada |
| VK†* | Australia |
| VK†* | Lord Howe I |
| VK9†* | Willis I |
| VK9†* | Christmas I |
| VK9†* | Cocos-Keeling Is |
| VK9†* | Mellish Reef |
| VK9†* | Norfolk I |
| VK0†* | Heard I |
| VK0†* | Macquarie I |
| VP2E[1] | Anguilla |
| VP2M[1,4] | Montserrat |
| VP2V[1,4] | Br Virgin Is |
| VP5* | Turks & Caicos Is |
| VP8* | Falkland Is |
| VP8, LU* | South Georgia Is |
| VP8, LU*8, LU* | South Orkney Is |
| VP | South Sandwich Is |
| VP8,CE9,HF0,LU,4K1* | South Shetland Is |
| VP9* | Bermuda |
| VQ9* | Chagos |
| VR6† | Pitcairn I |
| VS6* | Hong Kong |
| VU* | India |
| VU* | Andaman & Nicobar Is |
| VU* | Laccadive Is |
| XA-XI†* | Mexico |
| XA4-XI4†* | Revilla Gigedo |
| XT[17] | Burkina Faso |
| XU | Kampuchea |
| XW | Laos |
| XX9 | Macao |
| XY-XZ | Myanmar |
| Y2-9[20] | German Dem Rep |
| YA | Afghanistan |
| YB-YH[21*] | Indonesia |
| YI* | Iraq |
| YJ* | Vanuatu |
| YK* | Syria |
| YN†* | Nicaragua |
| YI-YYR* | Romania |
| YS†* | El Salvador |
| YT YU, YZ* | Yugoslavia |
| YV-YY†* | Venezuela |
| YV0†* | Aves I |
| Z2* | Zimbabwe |
| ZA | Albania |
| ZB2* | Gibraltar |
| ZC4[34*] | UK Sov Base Areas on Cyprus |
| ZD7 | St Helena |
| ZD8* | Ascension I |
| ZD9 | Tristan da Cunha & gough I |
| ZF* | Cayman Is |
| ZK1* | South Cook Is |
| ZK1* | North Cook Is |
| ZK2 | Niue |
| ZK3 | Tokelau Is |
| ZL-ZM* | New Zealand |
| ZL7* | Chatham Is |
| ZL8* | Kermadec Is |
| ZL9* | Auckland I & Campbell I |
| ZP†* | Paraguay |
| ZR-SU* | South Africa |
| ZR2-ZU8* | Prince Edward & Marion Is |
| ZS9[32*] | Walvis Bay |
| 1A0* | Sov Mil Order of Malta |
| 1S* | Spratly Is |
| 3A* | Monaco |
| 3B6, 7* | Agalega & St Brandon |
| 3B8* | Mauritius |
| 3B9* | Rodriguez I |
| 3C | Equatorial Guinea |
| 3C0* | Pagalu I |
| 3D2* | Fiji |
| 3D2* | Conway Reef |
| 3D2* | Rotuma I |
| 3DA†* | Swaziland |
| 3V | Tunisia |
| 3W, XV | Vietnam |
| 3X | Guinea |
| 3Y* | Bouvet |
| 3Y* | Peter I |
| 4J1* | Malyj Vysotskij I |
| 4P-4S* | Sri Lanka |
| 4U†* | ITU Geneva |
| 4U* | HQ. United Nations |
| 4W | Yemen |
| 4X, 4Z†* | Israel |
| 5A | Libya |
| 5B* | Cyprus |
| 5H-5I | Tanzania |
| 5N-5O* | Nigeria |
| 5R-5S | Madagascar |
| 5T[7*] | Mauritania |
| 5U[19] | Niger |
| 5V* | Togo |
| 5W* | Western Samoa |
| 5X | Uganda |
| 5Y-5Z* | Kenya |
| 6V-6W[2*] | Senegal |
| 6Y†* | Jamaica |
| 7O | People's Dem Rep of Yemen |
| 7P* | Lesotho |
| 7Q | Malawi |
| 7T-7Y* | Algeria |
| 8P* | Barbados |
| 8Q* | Maldive Is |
| 8R†* | Guyana |
| 9G[22] | Ghana |
| 9H* | Malta |
| 9I-9J* | Zambia |
| 9K* | Kuwait |
| 9L† | Sierra Leone |
| 9M2, 4[29*] | Malaysia |
| 9M6, 8[29*] | Eastern Malaysia |
| 9N | Nepal |
| 9Q-0T* | Zaire |
| 9U* | Burundi |
| 9V[28*] | Singapore |
| 9X[2*] | Rwanda |
| 9Y-9Z†* | Trinidad & Tobago |

Abu Ail Jabal at Tair

**Notes:**

[1]Unofficial prefix

[2](DA-DL) Only contacts made 17 September 1973, and after, count for this country

[3](Y-29) Only contacts made 17 September 1973, and after, count for this country

[4](FR) Only contacts made 25 June 1960, and after count for this country.

[5](JD, KA1) Formerly Marcus Island.

[6](JD, KA1) Formerly Bonin and Volcano Islands.

[7](P2) Only contacts made 16 September 1975, and after, count for this country.

[8](TL) Only contacts made 13 August, 1960, and after count for this country.

[9](TN) Only contacts made 15 August 1960, and after, count for this country.

[10](TR) Only contacts made 17 August 1960, and after, count for this country

[11](TT) Only contacts made 11 August 1960, and after, count for this country

[12](TY) Only contacts made 7 August 1960, and after, count for this country.

[13](TY) Only contacts made 1 August 1960, 1960 and after, count for this country

[14](TZ) Only contacts made 20 June 1960, and after, count for this country.

[15](VP2) For DXCC credit for contacts made 31 May 1958, and before, see page 97, June 1958 *QST*

[16](T2, VR6) Only contacts made 1 January1967, and after, count for this country

[17](XT) Only contacts made 5 August 1960, and after, count for this country

[18](5T) Only contacts made 20 June 1960, and after, count for this country

[19](5U) Only contacts made 3 August1960, and after, count for this country

[20](6W) Only contacts made 20 June 1960, and after, count for this country.

[21](8F, YB) Only contacts made 1 May 1963, and after, count for this country.

[22 23](9G) Only contacts made 5 March 1957, and after, count for this country

[23](9M2, 4, 6, 8) Only contacts made 16 September 1963, and after, count for this country

[24](9U, 9X) Only contacts made 1 July 1962, and after count for this country

[25](9V) Contacts made from 16 September 1963 to 8 August 1965 count for West Malaysia

[26](D6, FH8) Only contacts made 5 July 1975, and after, count for this country

[27](KP5, KP4) Only contacts made 1 March 1979, and after, count for this country

[28](V6, KC6) Includes Yap Is, 1 January 1981, and after

[29](KC6) Includes Yap Is 31 December 1980, [redacted]

[30](ZC4) Only contacts made 16 August 1960, and after, count for this country

[31](P4) Only contacts made 1 January 1966, and after, count for this country.

[32](S0) Contacts with Rio de Oro (Spanish Sahara), EA9, also count for this country

[33](ZS9) Only contacts made 1 September 1977, and after, count for this country.

+Also AT0, DP0, FT8Y, LU, OR4, VK0, VP8, Y8, ZL5, ZS1, ZX0, E6, 4K1 8J1, etc QSL via country under whose auspices the particular station is operating. The availability of a third-party traffic agreement and a QSL Bureau applies to the country under whose auspices the particular station is operating.

DELETED COUNTRIES

Deleted Countries Total: 51

Credit for any of these countries can be give if the date of contact with the country in question agrees with the date(s) shown in the corresponding footnote.

| Prefix | Country |
|---|---|
| AC3[1,2] | Sikkim |
| AC4[1,3] | Tibet |
| C9[4] | Manchuria |
| CN2[5] | Tangier |
| CR5[6] | Dameo, Diu |
| CR5[6] | Goa |
| CR8, CR10[7] | Portuguese Timor |
| DA-DM[8] | Germany |
| EA9[9] | Ifni |
| ET2[10] | Eritrea |
| FF[11] | Fr West Africa |
| FH, FB8[12] | Comoros |
| FI8[13] | Fr Indo-China |
| FN8[14] | French India |
| FQ8[15] | Fr Equatorial Africa |
| HK0[16] | Bajo Nuevo |
| HK0, K0E, KS4[16] | Serrana Bank & Roncador Cay |
| I1[17] | Trieste |
| I5[18] | Italian Somaliland |
| JD1/7J1[19] | Okino Tori-Shima |
| JZ0[20] | Netherlands N Guinea |
| KR6,8, J46,KA6[21] | Okinawa (Ryukyu Islands) |
| KS4[22] | Swan Islands |
| KZ5[23] | Canal Zone |
| P2,VK9[24] | Papua Territory |
| P2,VK9[24] | Terr New Guinea |
| PK1-3[25] | Java |
| PK4[25] | Sumatra |
| PK5[25] | Netherlands Borneo |
| PK6[25] | Celebe & Molucca Is |
| UN1[29] | Karelo-Finnish Rep |
| VO[27] | Newfoundland, Labrador |
| VQ1,5H1[28] | Zanzibar |
| VQ6[29] | British Somaliland |
| VQ9[30] | Aldabra |
| VQ9[30] | Desroches |
| VQ9[30] | Farquhar |
| VS2, 9M2[31] | Malaya |
| VS4[31] | Sarawak |
| VS9H[32] | Kuria Muria I |
| ZC5[31] | British North Borneo |
| ZC6,4X1[33] | Palestine |
| ZD4[34] | Gold Coast, Togoland |
| 1M[1,35] | Minerva Reef |
| 7O-VS9K[26] | Kamaran Is |
| 8Z4[37] | Saudi Arabia/Iraq Neutral Zone |
| 8Z5, 9K3[38] | Kuwait/Saudi Arabia Neutral Zone |
| 9S4[39] | Saar |
| 9U5[40] | Ruanda-Urundi |
| [41] | Blenheim Reef |
| [42] | Geyser Reef |

[redacted]

[1]Unofficial prefix.

[2](AC3) Only contacts made 30 April 1975, and after, count for this country. Contact made 1 May 1975, and after, count as India.

[3](AC4) Only contacts made 30 May 1974, and after, count for this country. Contacts made 31 May 1974 and after, count as China (BY).

[4](C9) Only contacts made 15 September 1963, and after, count for this country. Contacts made 16 September 1963, and after, count as China (BY).

[5](CN2) Only contacts made 30 June 1960, and after, count for this country. Contacts made 1 July 1960, and after, count as Morocco (CN).

[6](CR6) Only contacts made 31 December 1961 and before, count for this country

[7](CR8,CR10) Only contacts made 14 September 1976, and before, count for this country

[8](DA-DM) Only contacts made 16 September 1973, and before, count for this country. Contacts made 17 September 1973, and after count as either FRG (DA-DL) or GDR (Y2-Y9)

[9](EA9) Only contacts made 13 May 1969, and before, count for this country

[10](ET2) Only contacts made 14 November 1962, and before, count for this country. Contacts made 15 November 1962, and after count as Ethiopia (ET)

[11](FF) Only contacts made 8 August 1960, and before, count for this country.

[12](FH, FB8) Only contacts made 5 July 1975, and before, count for this country. Contacts made 6 July 1975, and after, count as Comoros (D6) or Mayotte (FH)

[13](FI8) Only contacts made 20 December 1950, and before, count for this country

[14](FN8) Only contacts made 31 October 1954, and before, count for this country

[15](FQ8) Only contacts made 16 August 1960, and before, count for this country

[16](HK0, KP3, KS4) Only contacts made 16 September 1981 and before, count for this country. Contacts made 17 September 1981, and after count as San Andres (HK0)

[17](I1) Only contacts made 31 March 1957 and before, count for this country. Contacts made 1 april 1957 and after, count as Italy (I)

[18](I5) Only contacts made 30 June 1960, and before, count for this country

[19](JD1/7J1) Only contacts made 30 May 1976, and before, count for this country. Contacts made 1 December 1980, and after count as Ogasawara (JD1)

[20](JZ0) Only contacts made 30 April 1963, and before, count for this country

[21](KR6,8, JR6, KA6) Only contacts made 14 May 1972, and before count for this country. Contacts made 15 May 1972, and after, count as Japan (JA)

[22](KS4) Only contacts made 31 August 1972, and before, count for this country. Contacts made 1 September 1972 and after count as Honduras (HR)

[23](KZ5) Only contacts made 30 September 1979, and before, count for this country

[24](P2 VK9) Only contacts made 15 September 1975, and before, count for this country. Contacts made 16 September 1975, and after count as Papua New Guinea (P2).

[25](PK1-6) Only contacts made 30 April 1963, and before, count for this country. Contacts made 1 May 1963, and after, count as Indonesia (YB)

[26](UN1) Only contacts made 30 June 1960, and before, count for this country. Contacts made 1 July 1960, and after, count as European RSFSR (UA)

[27](VO) Only contacts made 31 March 1949, and before, count for this country. Contacts made 1 April 1949 and after count as Canada (VE)

[28](VQ1, 5H1) Only contacts made 31 May 1974, and before, count for this country. Contact made 1 June 1974, and after, count as Tanzania (5H)

[29](VQ6) Only contacts made 40 June 1960, and before, count for this country

[30](VQ9) Only contacts made 28 June 1976, and before, count for this country. Contacts made 29 June 1976, and after, count as Seych-

alles (S7).
[31](VS2, VS4, ZC5, 9M2) Only contacts made 15 September 1963, and before, count for this country. Contacts made 16 September 1963, and after, count as West Malaysia (9M2) or East Malaysia (9M6,8).
[32](VS9H) Only contacts made 29 November 1967 and before, count for this country.
[33](ZC6, 4X1) Only contacts made 30 June 1968, and before, count for this country.
[34](ZD4) Only contacts made 5 March 1957, and before, count for this country.
[35](1M) Only contacts made 15 July 1972, and before count for this country. Contacts made 16 July 1972, and after, count as Tonga (A3).
[36](7O/VS9K) Only contacts made 10 March 1962, and before, count for this country.
[37](8Z4) Only contacts made 25 December 1962, and before, count for this country.
[38](8Z5, 9K3) Only contacts made 14 December 1969, and before, count for this country.
[39](9S4) Only contacts made 31 March 1957, and before, count for this country.
[40](9U5) Only contacts made 1 July 1962, and before, count for this country. Contacts made 1 July 1962, and after, count as Burundi (9U) or Rwanda (9X).
[41] (Blenheim Reef) Only contacts made 4 May 1967 to 30 June 1975, count for this country. Contacts made [1] July 1975, and after, count as Chagos (VQ9).
[42](Geyser Reef) Only contacts made 4 May 1967 to 28 February 1978, count for this country

PREFIX CROSS REFERENCES
A8 = EL
AC (before 1972) = A5
AH = KH
AL7 = KL7
AM-AO = EA
AT-AW = VU
AX = VK
AY-AZ = LU
CF-CK = VE
CL = CO
CQ-CS = CT
CR3 (before 1974) = J5
CR4 (before 1976) = D4
CR5 (before 1976) = S9
CR6 (before 1976) = D2
CR7 (before 1976) = C9
CR9 (before 1985) = XX9
CT2 (before 1986) = CU
CX0 - CE9/VP8
CY-CZ = VE
CY0 (before 1965) = CY9
DM-DT (before 1980) = Y2-9
EA0 (before 1969) = 3C
ES = UR
EK, EM-EO, ER-ES, EU-EZ = U
FA-FF (before 1963) = F
FA (before 1963) = 7X
FB8 (before 1961) = 5R
FB8 (before 1965) = FT
FC (before 1965) = TK
FD8 (before 1961) = 5V
FE8 (before 1961) = TJ
FL (before 1976) = J2
FJ8 (before 1982) = YJ
GB = G
GC (before 1977) = FJ/GU
H2 = 5B
H3 = HP
H5 (BOPHUTATSWANA) = ZS
H7 = YN
HE = HB
HM (before 1962) = HL
HT = YN
HU = YS
HW-HY = F
J4 = SV
KA1 = JDKA2AA-KA8ZZ = JA
KC6 (before 1990) = V6
KB6 (before 1979) = KH1
KC4 (NAVASSA) = KP1
KG6 (before 1979) = KH2
KG61 (before 1970) = JD1
KG6R, S, T (before 1979) = KH0
KJ6 (before 1979) = KH3
KM6 (before 1979) = KH4
KP4 (Desecheo) = KP5
KP6 (before 1979) = KH5
KS6 (before 1979) = KH6
KV4 (before 1979) = KP2
KW6 (before 1979) = KH9
KX6 (before 1990) = V7
L2-9 = LU
LY = UP
M1 (before 1984) = T7
MP4B (before 1972) = A9
MP4M (before 1972) = A4
MP4Q (before 1972) = A7
MP4T, D (before 1972) = A6
NH = KH
NL7 = KL7
NP = KP
OQ (before 1961) = 9Q
P4 (before 1986) = PJ
PX (before 1970) = C3
RA, RN = UA
RB-RR = UB-UR
RS = U
RT = UB
RU-RZ = U
S4 (Ciskei) = ZS
S8 (Transkei) = ZS
T4 = CO
T4 (Venda) = ZS
TH, TM, TO-TQ, TV-TX = F
UN, UV, UW, UZ = UA
V9 (Venda) = ZS
VA-VG = VE
VH-VN = VK
VK9 (Nauru) = C2
VP1 (before 1962) = V2
VPWA (before 1982) = V2
VP2D (before 1979) = J7
VP2G (before 1975) = J3
VP2K (before 1984) = V4 or VP2E
VP2L (before 1960) = J6
VP2S (before 1960) = J8
VP3 (before 1967) = 84
VP4 (before 1963) = 9Y
VP5 (Jamaica) = 6Y
VP6 (before 1967) = 8P
VP7 (before 1974) = C6
VQ2 (before 1965) = 9J
VQ3 (before 1962) = 5H
VQ4 (before 1964) = 5Z
VQ5 (before 1963) = 5X
VQ6 (before 1969) = 3B
VQ6 (Chagos) = VQ9
VQ9 (Seychelles) = S7
VR1 (before 1980) = T3
VR2 (before 1971) = 3D2
VR3 (before 1980) = T32
VR4 (before 1979) = H4
VR5 (before 1971) = A3
VR6 (before 1979) = T2
VS1 (before 1966) = 9V
VS5 (before 1985) = V8
VS7 (before 1949) = 4S
VS9A, P, S (before 1966) = 70
VS9M = 8Q
VS9O (before 1961) = A4
VX-VY = CY0/VE
WH = KH
WL7 = KL7
WP = KP
XJ-XO = VE
XP = OX
XQ-XR = CE
XV = 3W
XX7 (before 1976) = C9
YL = UQ
ZB1 (before 1965) = 9H
ZD1 (before 1962) = 9L
ZD2 (before 1961) = 5N
ZD3 (before 1966) = C5
ZD4 (before 1956) = 9G
ZD5 (before 1966) = 3DA
ZD6 (before 1965) = 7Q
ZE (before 1961) = Z2-9
ZK9 (1983) = ZK2
ZM6 (before 1963) = 5W
ZM7 (before 1964) = ZK3
ZS7 (before 1969) = 3D6
ZS8 (before 1967) = 7P
ZS9 (before 1967) = A2
ZC-ZZ = PY
3B-3C (before 1968) = VE
3D6 (before 1968) = 3DA
3G = CE
3Z = SP
4A-4C = XE
4D-4I = DU
4J-4L = U
4M = YV
4N-4O = YU
5T = OA
4U1VIC = OE
4V = HH
5J-5K = HK
5L-5M = EL
6C = YK
6D-6J = XE
6O = T5
6T-6U = ST
7A-7I = YB
7G (before 1967) = 3X
7J-7N = JA, JD
7S = SM
7Z = HZ
8A-8I = YB
8J-8N = JA
8O = A2
8S = SM
9A (before 1984) = T7
9B-9D = EP
9E-9F = ET
CONTINENT
AF = AFRICA
AN = ANTARCTICA
AS = ASIA
EU = EUROPE
NA = NORTH AMERICA
OC = OCEANIA
SA = SOUTH AMERICA

ZONE NOTES
(A) 33, 42, 43, 44
(B) 67, 69-74
(C) 12, 13, 29, 30, 32, 36, 39
(D) 12, 13, 15
(E) 19, 20, 29, 30
(F) 20-26, 30-35, 75
(G) 16, 17, 18, 19, 23
(H) 2, 3, 4, 9, 75
(I) 55, 58, 59

Allocation of International Callsigns

| Callsign Series | Allocated to |
|---|---|
| AAA-ALZ | United States of America |
| AMA-AOZ | Spain |
| APA-ASZ | Pakistan |
| ATA-AWZ | India |
| AXA-AXZ | Australia |
| AYA-AZZ | Argentina |
| A2A-A2Z | [redacted] |
| A3A-A3Z | Tonga |
| A4A-A4Z | Oman |
| A5A-A5Z | Bhutan |
| A6A-A6Z | United Arab Emirates |
| A7A-A7Z | Qatar |
| A8A-A8Z | Liberia |
| A9A-A9Z | Bahrain |
| BAA-BZZ | China |
| CAA-CEZ | Chile |
| CFA-CKZ | Canada |
| CLA-CMZ | Cuba |
| CNA-CNZ | Morocco |
| COA-COZ | Cuba |
| CPA-CPZ | Bolivia |
| CQA-CUZ | Portugal |
| CVA-CXZ | Uruguay |
| CYA-CZZ | Canada |
| C2A-C2Z | Nauru |
| C3A-C3Z | Andorra |
| C4A-C4Z | Cyprus |
| C5A-C5Z | Gambia |
| C6A-C6Z | Bahamas |
| C7A-C7Z* | World Meteorological Organisation |
| C8A-C9Z | Mozambique |
| DAA-DRZ | Federal Republic of Germany |
| DSA-DTZ | Republic of Korea |
| DUA-DZZ | Philippines |
| D2A-D3X | Angola |
| D4A-D4Z | Cape Verde |
| D5A-D5Z | Liberia |
| D6A-D6Z | Comoros |
| D7A-D9Z | Republic of Korea |
| EAA-EHZ | Spain |
| EIA-EJZ | Ireland |
| EKA-EKZ | Union of Soviet Socialist Republics |
| ELA-ELZ | Liberia |
| EMA-EOZ | Union of Soviet Socialist Republics |
| EPA-EQZ | Iran |
| ERA-ESZ | Union of Soviet Socialist Republics |
| ETA-ETZ | Ethiopia |
| EUA-EWZ | Byelorussian Soviet Socialist Republic |
| EXA-EZZ | Union of Soviet Socialist Republics |
| FAA-FZZ | France |
| GAA-GZZ | United Kingdom of Great Britain and Northern Ireland |
| HAA-HAZ | Hungary |
| HBA-HBZ | Switzerland |
| HCA-HDZ | Ecuador |
| HEA-HEZ | Switzerland |
| HFA-HFZ | Poland |
| HGA-HGZ | Hungary |
| HHA-HHZ | Haiti |
| HIA-HIZ | Dominican Republic |
| HJA-HKZ | Colombia |
| HLA-HLZ | Republic of Korea |
| HMA-HMZ | Democratic People's Republic of Korea |
| HNA-HNZ | Iraq |
| HOA-HPZ | Panama |
| HQA-HRZ | Honduras |
| HSA-HSZ | Thailand |
| HTA-HTZ | Nicaragua |
| HUA-HUZ | El Salvador |
| HVA-HVZ | Vatican City |
| HWA-HYZ | France |
| HZA-HZZ | Saudi Arabia |
| H2A-H2Z | Cyprus |
| H3A-H3Z | Panama |
| H4A-H4Z | Solomon Islands |
| H6A-H7Z | Nicaragua |
| H8A-H9Z | Panama |
| IAA-IZZ | Italy |
| JAA-JSZ | Japan |
| JTA-JVZ | Mongolian People's Republic |
| JWA-JXZ | Norway |
| JYA-JYZ | Jordan |
| JZA-JZZ | Indonesia |
| J2A-J2Z | Djibouti |
| J3A-J3Z | [redacted] |
| J4A-J4Z | [redacted] |
| J5A-J5Z | Guinea-Bissau |
| J6A-J6Z | Saint Lucia |
| J7A-J7Z | Dominica |
| J8A-J8Z | St Vincent and the Grenadines |
| KAA-KZ | United States of America |
| LAA-LNZ | Norway |
| LOA-LWZ | Argentina |
| LXA-LXZ | Luxembourg |
| LYA-LYZ | Union of Soviet Socialist Republics |
| LZA-LZZ | Bulgaria |
| L2A-L9Z | Argentina |
| MAA-MZZ | United Kingdom of Great Britain and Northern Ireland |
| NAA-NZZ | United States of America |
| OAA-OCZ | Peru |
| [redacted] | Lebanon |
| OEA-OEZ | Austria |
| OFA-OJZ | Finland |
| OKA-OMZ | Czechoslovakia |
| ONA-OTZ | Belgium |
| OUA-OZZ | Denmark |
| PAA-PIZ | Netherlands |
| PJA-PJZ | Netherlands Antilles |
| PKA-POZ | Indonesia |
| PPA-PYZ | Brazil |
| PZA-PZZ | Suriname |
| P2A-P2Z | Papua New guinea |
| P3A-P3Z | Cyprus |
| P4A-P4Z | Aruba |
| P5A-P9Z | Democratic People's Republic of Korea |
| QAA-QZZ | (Service abbreviations) |
| RAA-RZZ | Union of Soviet Socialist Republics |
| SAA-SMZ | Sweden |
| SNA-SRZ | Poland |
| SSA-SSM | Egypt |
| SSN-STZ | Sudan |
| SUA-SUZ | Egypt |
| SVA-SZZ | Greece |
| S2A-S3Z | Bangladesh |
| S6A-S6Z | Singapore |
| S7A-S7Z | Seychelles |
| S9A-S9Z | Sao Tome and Principe |
| TAA-TCZ | Turkey |
| TDA-TDZ | Guatemala |
| TEA-TEZ | Costa Rica |
| TFA-TFZ | Iceland |
| TGA-TGZ | Guatemala |
| THA-THZ | France |
| TIA-TIZ | Costa Rica* |
| TJA-TJZ | Cameroon |
| TKA-TKZ | France |
| TLA-TLZ | Central African Republic |
| TMA-TMZ | France |
| TNA-TNZ | Congo |
| TOA-TQZ | France |
| TRA-TRZ | Gabon |
| TSA-TSZ | Tunisia |
| TTA-TTZ | Chad |
| TUA-TUZ | Ivory Coast |
| TVA-TXZ | France |
| TYA-TYZ | Benin |
| TZA-TZZ | Mali |
| T2A-T2Z | Tuvalu |
| T3A-T3Z | Kiribati |
| T4A-T4Z | Cuba |
| T5A-T5Z | Somalia |
| T6A-T6Z | Afghanistan |
| T7A-T7Z | San Marino |
| UAA-UQZ | Union of Soviet Socialist Republics |
| URA-UTZ | Ukrainian Soviet Socialist Republic |
| UUA-UZZ | Union of Soviet Socialist Republics |
| VAA-VGZ | Canada |
| VHA-VNZ | Australia |
| VOA-VOZ | Canada |
| VPA-VSZ | United Kingdom of Great Britain and Northern Ireland |
| VTA-VWZ | India |

| | |
|---|---|
| VXA-VYZ | Canada |
| VZA-VZZ | Australia |
| V2A-V2Z | Antigua and Barbuda |
| V3A-V3Z | Belize |
| V4A-V4Z | St Christopher and Nevis |
| V6A-V6Z | Micronesia |
| V7A-V7Z | Marshall Islands |
| V8A-V8Z | Brunei |
| WAA-WZZ | United States of America |
| XAA XIZ | Mexico |
| XJA-XOZ | Canada |
| XPA-PXZ | Denmark |
| XQA-XRZ | Chile |
| XSA-XSZ | China |
| XTA-XTZ | Burkina Faso |
| XUA-XUZ | Kampuchea |
| XVA-XVZ | Vietnam |
| XWA-XWZ | Laos |
| XXA-XXZ | Portugal |
| XYA-XZZ | Burma |
| YAA-YAZ | Afghanistan |
| YBA-YHZ | Indonesia |
| YIA-YIZ | Iraq |
| YJA-YJZ | New Hebrides |
| YKA-YKZ | Syria |
| YLA-YLZ | Union of Soviet Socialist Republics |
| YMA-YMZ | Turkey |
| YNA-YNZ | Nicaragua |
| YOA-YRZ | Romania |
| YSA-YSZ | El Salvador |
| YTA-YUZ | Yugoslavia |
| YVA-YYZ | Venezuela |
| YZA-YZZ | Yugoslavia |
| Y2A-Y9Z | German Democratic Republic |
| ZAA-ZAZ | Albania |
| ZBA-ZJZ | United Kingdom of Great Britain and Northern Ireland |
| ZKA-ZMZ | New Zealand |
| ZNA-ZOZ | United Kingdom of Great Britain and Northern Ireland |
| ZPA-ZPZ | Paraguay |
| ZQA-ZQZ | United Kingdom of Great Britain and Northern Ireland |
| ZRA-ZUZ | South Africa |
| ZVA-ZZZ | Brazil |
| Z2A-Z2Z | Zimbabwe |
| 2AA-2ZZ | United Kingdom of Great Britain and Northern Ireland |
| 3AA-3AZ | Monaco |
| 3BA-3AZ | Mauritius |
| 3CA-3CZ | Equatorial Guinea |
| 3DA-3DM | Swaziland |
| 3DN-3DZ | Fiji |
| 3EA-3FZ | Panama |
| 3GA-3GZ | Chile |
| 3HA-3UZ | China |
| 3VA-3VZ | Tunisia |
| 3WA-3WZ | Vietnam |
| 3XA-3XZ | Guinea |
| 3YA-3YZ | Norway |
| 3ZA-3ZZ | Poland |
| 4AA-4CA | Mexico |
| 4DA-4IZ | Philippines |
| 4JA-4LZ | Union of Soviet Socialist Republics |
| 4MA-4MZ | Venezuela |
| 4NA-4OZ | Yugoslavia |
| 4PA-4SZ | Sri Lanka |
| 4TA-4TZ | Peru |
| 4UA-4UZ* | United Nations Organisation |
| 4VA-4VZ | Haiti |
| 4WA-4WZ | Yemen Arab Republic |
| 4XA-4XZ | Israel |
| 4YA-4YZ* | International Civil Aviation Organisation |
| 4ZA-4ZZ | Israel |
| 5AA-5AZ | Libya |
| 5BA-5BZ | Cyprus |
| 5CA-5GZ | Morocco |
| 5HA-5IZ | Tanzania |
| 5JA-5KZ | Colombia |
| 5LA-5MZ | Liberia |
| 5NA-5OZ | Nigeria |
| 5PA-5QZ | Denmark |
| 5RA-5SZ | Madagascar |
| 5TA-5TZ | Mauritania |
| 5UA-5UZ | Niger |
| 5VA-5VZ | Togo |
| 5WA-5WZ | Western Samoa |
| 5XA-5XZ | Uganda |
| 5YA-5ZZ | Kenya |
| 6AA-6BZ | Egypt |
| 6CA-6CZ | Syria |
| 6DA-6JZ | Mexico |
| 6KA-6NZ | Republic of Korea |
| 6OA-6OZ | Somalia |
| 6PA-6SZ | Pakistan |
| 6TA-6UZ | Sudan |
| 6VA-6WZ | Senegal |
| 6XA-6XZ | Madagascar |
| 6YA-6YZ | Jamaica |
| 6ZA-6ZZ | Liberia |
| 7AA-7IZ | Indonesia |
| 7JA-7NZ | Japan |
| 7OA-7OZ | Yemen |
| 7PA-7PZ | Lesotho |
| 7QA-7QZ | Malawi |
| 7RA-7RZ | Algeria |
| 7SA-7SZ | Sweden |
| 7TA-7YZ | Algeria |
| 7ZA-7ZZ | Saudia Arabia |
| 8AA-8IZ | Indonesia |
| 8JA-8NZ | Japan |
| 8OA-8OZ | Botswana |
| 8PA-8PZ | Barbados |
| 8QA-8QZ | Maldives |
| 8RA-8RZ | Guyana |
| 8SA-8SZ | Sweden |
| 8TA-8YZ | India |
| 8ZA-8ZZ | Saudi Arabia |
| 9BA-9DZ | Iran |
| 9EA-9FZ | Ethiopia |
| 9GA-9GZ | Ghana |
| 9HA-9HZ | Malta |
| 9IA-9JZ | Zambia |
| 9KA-9KZ | Kuwait |
| 9LA-9LZ | Sierra Leone |
| 9MA-9MZ | Malaysia |
| 9NA-9NZ | Nepal |
| 9OA-9TZ | Zaire |
| 9UA-9UZ | Burundi |
| 9VA-9VZ | Singapore |
| 9WA-9WZ | Malaysia |
| 9XA-9XZ | Rwanda |
| 9YA-9ZZ | Trinidad and Tobago |

Note

The series of callsigns with an asterisk indicate the international organisation to which they are allocated.

# Videotape Library

WIA VIDEOTAPE LIBRARY c/- JOHN INGHAM VK5KG
37 SECOND AVENUE SEFTON PARK SA 5083

Now every radio club can provide its members with quality technical lectures on subjects covering the whole range of amateur radio activities by taking advantage of the WIA Federal Videotape Library. You'll find this a boon, particularly if yours is a country club which often has difficulty obtaining a variety of expert lecturers for its regular meetings. (Individual Amateurs and Librarians should take note of the duplication fees at the end of this)

For radio clubs affiliated with the WIA it's inexpensive and easy.

Here's how it works.

For those titles for which the WIA does NOT hold a copyright licence, all you have to do is

Supply the Videotape Co-ordinator with a video cassette in a video cassette box "postpak", and enclose address and stamps for return postage, and the program is free for you to use in support of amateur radio in your area including copying and transmission over the air if you wish

Those programs which are copyright marked c' below, are available only ON LOAN

To obtain any of them, send with your request

Information about your preferred VCR format; a statement signed by a responsible officer of your club that "I undertake that while (program title) is assigned to me, I will not allow it to be transmitted over the air, nor copied by any means whatsoever, and that I will return the same promptly after showing".

Enclose address and stamps for postage to you.

The present "available formats" are as follows

VHS — size 200 x 110 x 30mm, mass 350gr

* Standard play 4hr max. or long play 8hr max, as requested
* Standard sound — Dolby on or off as requested

"Hi-Fi" FM sound also present on all VHS cassettes

Beta — size 160 x 100 x 30mm, mass 300gr

Standard play 3 hr 15min max only

Standard sound only (no Dolby)

Video 8 — size 103 x 66 x 20mm, mass 80gr

* Standard play 1-½hr max, or long play 3hr max as requested
* Hi-Fi" FM sound is standard (no Dolby).

Obviously, the smaller and lighter the cassette, the less the postage.* Note: Be sure to request standard or long play, Dolby on or off.

Note to individual amateurs. Since the inception of the WIA Federal Video Service, cassettes have been made freely available to all comers, especially to isolated amateurs. However, recently there has been a rapid rise in the number of requests from individual amateurs, some asking for over 10 hours of programs at a time.

Video duplication is a real-time, one-at-a-time operation for which the cost of maintenance of the equipment is not small. Obviously the service is much more economical if (say) one tape is seen by 30 members of a club than if each of the 30 members were to request their own personal copy. Indeed, if EVERY member of the WIA requested just ONE program it would take about four years at 40 hours weeks to service!

So, in an effort to encourage requests from groups of amateurs rather than individuals, from now on a duplication fee of $2 per hour or part thereof will be payable in advance for all requests from individual amateurs. All such fees will go towards upkeep of the duplication equipment

Note to librarians. A number of educational institutions have already availed themselves of the technical lecture tapes from the WIA. While this service will continue to be available, from now on a duplication fee of $10 per hour or part thereof will be payable in advance by all institutions not affiliated with the WIA. All such fees will go towards the production costs of future technical lectures.

Note re tape cassette quality. The WIA Videotape Co-ordinator retains the right to refuse to copy onto inferior quality video tape. In the past, such tape has caused many hours of wasted time through clogged heads and, in future, only reputable brands of video tape will be accepted. In particular, although not always in itself a guarantee of quality use only those VHS cassettes which carry the official VHS logo.

# WIA Videotape Program Title Listing as of 1/1/91

| See Note | TITLE (in chronological order within each subject grouping) | Lecturer | Prod | Approx Dur | Col/ B&W | Year Prod | Description and/or Other Information |
|---|---|---|---|---|---|---|---|
| Note | within each subject grouping) | | | Dur | B&W | Prod | Other Information |
| | AMATEUR RADIO HISTORIC INTEREST | | | | | | |
| c | Wireless Telegraphy circa 1910 | | ? | 10mins | B&W | 1910 | Archive material courtesy David Wardlaw VK3ADW |
| c | Amateur Radio (TV Pilot Program | | WIA NSW | 30mins | B&W | 1968 | Archive material courtesy TEN channel 10 |
| — | Opening of Burley Griffen Bldg — SA HQ | | VK5KG | 50mins | Colour | 1977 | Archive material |
| — | ATV in Australia 1978 — made for British ATV Club | | VK5KG | 30mins | Colour | 1978 | Archive material |
| — | ATV in United Kingdom 1978 — reply from BATC | | GBCJS | 30mins | Colour | 1978 | Archive material |
| — | History of ATV in South Australia | | VK5KG | 30mins | Colour | 1980 | Archive material, still building |
| — | Opening of Amateur Radio House — NSW HQ | VK2BDN & VK2ZOC | | 1'42" | Colour | 1984 | Archive material |
| — | VK2 75th Anniv Seminar Keynote Speeches | | WIA NSW | 2'15" | Colour | 1983 | Dr David Wardlaw & State Manager DOC |
| c | Heard Island DXpeditions | | ch 2,7,9,10 | 20mins | Colour | 1984 | Archive material; NO LOAN OR COPY AVAILABLE |
| — | Heard Island DXpedition | VK2BCC | WIA NEW | 60mins | Colour | 1986 | Raw unedited: from 1986 VK2 Seminar |

| See Note | TITLE (in chronological order within each subject grouping) | Lecturer | Prod | Approx Dur | Col/ B&W | Year Prod | Description and/or Other Information |
|---|---|---|---|---|---|---|---|
| | AMATEUR RADIO PROMOTIONAL | | | | | | |
| d | The Ham's Wide World | | ARRL | 27mins | Colour | 1969 | Superseded by "The World of Amateur Radio" |
| | This is Amateur Radio | | ARRL | 15mins | Colour | 1970 | Pitched at teenagers |
| | Moving Up to Amateur Radio | | ARRL | 11mins | Colour | 1975 | Pitched at CBers |
| c | 7JIRL DXpedition | | JARL | 60mins | Colour | 1976 | General Amateur Radio interest. LOAN ONLY |
| — | This Week has 7 Days looks into Amateur Radio | | HSV7 | 25mins | Colour | 1978 | Pitched at teens, includes some ARRL footage |
| o | The World of Amateur Radio | | ARRL | 28mins | Colour | 1978 | Superseded by "The New World of Amateur Radio" |
| — | Amateur Radio The National Resource of Every Nation | VK5KG | | 6mins | Colour | 1979 | Encapsulates AR good for public exhibitions |
| — | The New World of Amateur Radio | | ARRL | 28mins | Colour | 1988 | Supersedes "The World of Amateur Radio" |
| | ANTENNAS | | | | | | |
| c | G6CJ's Aerial Circus | G6CJ | WIA | 90mins | B&W | 1977 | THE Definitive Antenna Lecture; LOAN ONLY |
| — | Wire Antennas | VK5RG | VK5KG | 40mins | B&W | 1978 | Antennas for HF and Antenna Tuners |
| | Loaded Wire Antennas | VK5NN | VK5KG | 50mins | Colour | 1980 | Using inductive and capacity loaded antennas |
| # | Antennas and Directivity | VK2BBF | OTC | 73mins | Colour | 1985 | Lecture given to a group of radio amateurs |
| — | Antenna Rotator Systems | VK5AIM | VK5KG | 50mins | Colour | 1986 | Servicing the several different types |
| — | Broadband Antennas | VK5RG | VK5KG | 62mins | Colour | 1986 | Includes terminated antennas |
| | ATV ACTIVITY | | | | | | |
| d | ATV in Australia 1980/81 – Made for British ATV Club | | VK5KG | 60mins | Colour | 1980 | Clips from ATV Groups in VKs 2,3,4,5,&8 |
| o | ATV in United Kingdom 1978/81 | | G8CJS | 30mins | Colour | 1981 | Remake of its previous effort |
| o# | CQ ATV DX International 1983 | | WB2LLB | 60mins | Colour | 1983 | ATV in USA and Europe |
| o | ATV in Victoria, 1984 | | VK3AHJ | 54mins | Colour | 1984 | Courtesy of "The Roadshow Gang" |
| — | Hello from America — Made for British ATV Club | | WB0QCD | 100mins | Colour | 1988 | Clips from ATV Groups in the USA |
| n | VK5 ATV Call-in July 1990 | various | VK5ZBD | 90mins | Colour | 1990 | Recorded off air from VK5RTV |
| n | Gladesville ARC AUSSAT TX of 14/11/90 | various | VK2ZZO | 3 hrs | Colour | 1991 | Recorded off air from VK5RTV via AUSSAT |
| | ATV — GENERAL INTEREST | | | | | | |
| — | Low-Definition Television | Chris Long | VK5KG | 25mins | Colour | 1982 | Re-creation of TV as transmitted by Baird |
| — | Model Aero-Nautical Mobile ATV | VK5GO | VK5KG | 6mins | Colour | 1983 | ATV camera & TX mounted in a model aeroplane |
| — | VK5RCN — Aust' first wind-powered ATV rptr | VK5KAU | VK5KG | 61mins | Colour | 1986 | A tour in and around VK5RCN |
| — | Australian TV History — The Untold Story | Chris Long | VK5KC | 56mins | Colour | 1988 | Lecture to radio amateurs Old Timers Club |
| — | Australian TV History — Part 2 | Chris Long | VK5KG | 49mins | Colour | 1988 | Technical slides not used in the above |
| — | The Development of the TV Test Card | George Hersee | G8PTH | 43mins | Colour | 1988 | Made for BATC by the BBC Training Dept |
| | ATV — TECHNICAL | | | | | | |
| s | The Signal to Noise Story | VK3ATY | VK3AHJ | 45mins | Colour | 1982 | Superseded by "UHF Preamplifiers" (below) |
| — | UHF Preamplifiers | VK3ATY | VK3AHJ | 45mins | Colour | 1983 | Explanation and demo of low-noise preamps |
| — | Getting Started in Amateur Television | VK5KTV | VK5KG | 55mins | Colour | 1983 | How to set up an ATV station |
| — | Testing ATV Transmitters | VK5KG | VK5KG | 50mins | Colour | 1983 | How to correctly measure ATV systems |
| o' | High Definition TV Tutorial | Don Fink | WB2LLB | 60mins | B&W | 1983 | A look at what is to come in Broadcast TV |
| o' | ATV Hamfest, York, Pennsylvania, Sept'83 | Various | WB2LLB | 6hrs | Colour | 1983 | Various ATV technical lectures from USA |
| | [redacted] | | | | | | |
| — | Demo of VK5RTV's Micro-Computer Controller #1 | VK5KG | VK5KG | 10mins | Colour | 1979 | First µ-computer controlled repeater in VK |
| o | Understanding Micro-Processors | VK5PE | VK5KG | 60mins | Colour | 1980 | A somewhat dated technical description |
| o | An ATV Hamshack Micro-Computer | VK3AHJ | VK3AHJ | 10mins | Colour | 1981 | Describes now unavailable microcomputer kit |
| — | Getting Started in Amateur Microcomputers | VK5IF | VK5KG | 33mins | Colour | 1983 | Demo of hard & software for amateur radio |
| | DATA TRANSMISSION | | | | | | |
| — | Getting Started in Amateur RTTY | VK5JN | VK5KG | 65mins | Colour | 1983 | RTTY using teleprinters and microcomputers |
| — | Amateur Packet Radio | VK5AGR | VK5KG | 60mins | Colour | 1984 | Theory and demonstration |
| — | Packet Radio — 10 Months On | VK2KYJ & VK2AAB | WIA NSW | 65mins | Colour | 1985 | Raw, unedited from 75 anniv VK2 Seminar |
| # | X25 Protocols and Packet Switching | VK2ZXB | OTC | 47mins | Colour | 1985 | Lecture given to a group of radio amateurs |
| | MICROWAVE TECHNIQUES | | | | | | |
| — | Introducing Microwaves | Des Cliff VK5ZO | PJ Video | 74mins | Colour | 1988 | "Nuts & Bolts" expert technical lecture |
| n | (see also Amateur Satellites and Packet Radio) | | | | | | |
| | PROPAGATION | | | | | | |
| — | Getting Started in Understanding the Ionosphere | VK5NX | VK5ZBD | 50mins | Colour | 1983 | How the ionosphere aids HF communication |
| — | VHF Signal Enhancement by Aircraft | VK2ZAB | WIA NSW | 70mins | Colour | 1986 | Raw, unedited: from 1986 VK2 Seminar |
| | SATELLITES | | | | | | |
| o | Getting Started in Amateur Satellites | VK5HI & VK5AGR | VK5KG | 60mins | Colour | 1983 | Superseded (see below) |
| o | An Introduction to Amateur Satellites (Pt 1) | VK5AGR | VK5KG | 60mins | Colour | 1984 | An overview of amateur satellite working |
| o | Micro-Computer Aids to Satellite Tracking (Pt 2) | VK5AGR | VK5KG | 30mins | Colour | 1984 | Programs for tracking & decoding telemtry |
| — | Using Phase III Amateur Satellites | VK5HI | VK5KG | 90mins | Colour | 1984 | History, construction & use of high-orbit sats |
| — | The Amsat Oscar Phase 3 Story Dr Karl Meinzer | DJ4ZC | VK5KG | 80mins | Colour | 1985 | "The Father of Oscar" includes film of launch |
| — | Antennas for Satellites | Dr Trevor Bird | WIA NSW | 75mins | Colour | 1986 | Raw, unedited; from 1986 VK2 Seminar |
| n | What Satellites Have to Offer | Grs Ratcliff VK5AGR | GARC | 190mins | Colour | 1990 | Recorded at Hay NSW Satellite Seminar |
| n | Am Sats and Packet Radio | Grs Ratcliff VK5AGR | GARC | 130mins | Colour | 1990 | Recorded at Hay NSW Satellite Seminar |
| n | AMSAT Ground Control | Grs Ratcliff VK5AGR | GARC | 152mins | Colour | 1990 | Recorded at Hay NSW Satellite Seminar |
| | SPACE — GENERAL INTEREST | | | | | | |
| — | Apollo 13 Disaster | VK5JM | VK5KG | 90mins | Colour | 1990 | Australian tracking procedure saved Apollo 13 |
| o | SSTV Pictures from Space Voyager | | VK5KG | 15mins | Colour | 1983 | SSTV pix converted from Satura fly past |
| — | Aussat Australia's Domestic Comms Satellite | VK5JN | VK5KG | 62mins | Colour | 1984 | Technical description of services offered |
| — | Amateur Radio's Newest Frontier | | ARRL | 28mins | Colour | 1985 | Amateur radio in space general PR |
| | Working W5LFL in orbit from VK1ORR | Richard Elliot | | 23mins | Colour | 1986 | Raw, unedited actuality footage |
| | MISCELLANEOUS | | | | | | |
| — | An Auxiliary Battery Charger | VK5NX | VK5KG | 30mins | Colour | 1981 | Charging a second mobile battery |
| — | Lecture — Winning Foxhunts | VK5TV | VK5KG | 45mins | Colour | 1981 | How to do it from one who has? |
| — | Getting Started in Amateur Construction | VK5AIM | VK5KG | 50mins | Colour | 1983 | Mechanical hints for novice constructors |
| — | Comms Consequences of Nuclear War | Dr John Coulter | VK5ZBD | 60mins | Colour | 1983 | Why your gear may not survive even if you do |
| — | The Far Eastern Broadcasting Company | | VK5KG | 60mins | Colour | 1983 | How a short-wave broadcaster operates |
| — | The Aust "Over the Horizon Radar" | Dr Phil Wilham | VK5KG | 60mins | Colour | 1984 | How the "Australian Woodpecker" works |
| — | What to Expect when the RI Calls | Geof Carter DOC | VK5KG | 34mins | Colour | 1984 | Geof is a Dept of Comms Field Officer |
| — | Doppler Direction Finding for Foxhunters | VK2BYY | WIA NSW | 43 mins | Colour | 1985 | Raw, unedited from 75 anniv VK2 Seminar |
| w | Fitting BNC Connectors | | OTC | 7mins | Colour | 1985 | Correct assembly of crimp-type BNC plugs |
| w | Handling Static Sensitive PCBs | Paul Tardent | OTC | 6mins | Colour | 1986 | Improving reliability of printed circuits |
| — | Extra Licence Grades | VK2ZTB | WIA NSW | 70mins | Colour | 1986 | Raw, unedited: from 1986 VK2 Seminar |
| — | Thick Film Modules | VK5DI | VK5KG | 45mins | Colour | 1988 | Desc of modules avail from vk5 wia |
| — | Quartz Crystals | Clem Tillbrook VK5GL | VK5GL | 106mins | Colour | 1988 | "Nuts & Bolts" expert technical lecture |
| n | How to Survive in a Dog Pile | John Saunders VK2DEJ | GARC | 148mins | Colour | 1989 | Recorded by Gladesville ARC for NSW WIA |
| n | HF DX Seminar | Iris & Les Colvin | GARC | 74mins | Colour | 1990 | Recorded by Gladesville ARC for NSW WIA |
| n | Making Friends on DX | Syd Moten VK2SG | GARC | 28mins | Colour | 1990 | Recorded by Gladesville ARC for NSW WIA |

NOTE "c' = Copyright no copy service "#" = Optically converted to PAL from NTSC by VB2LLB, noticeable flicker "w" = available ONLY to radio clubs affiliated with the WIA as per agreement with OTC "o" = program now out of date. "n" = new edition.
Standard formats. "Beta", "Video-8" St & I Play, "VHS" St & I Play, "Dolby" and "Hi-Fi" sound please specify when ordering.

# Australian VHF-UHF Records

**Updated 21/12/90**

**Key:** **EME** National EME records
**DIG** Digital modes records
**ATV** National ATV records
**MOB** National mobile records

**National records shown in bold type**

| Div | From | To | Date | Distance |
|---|---|---|---|---|
| **6-Metre Band** | | **50-54MHz** | | |
| VK2 | VK2ASC | VE1ASJ | 06/04/61 | 16654.4 |
| VK3 | VK3OT | F5HWM | 19/10/69 | 16887.8 |
| VK4 | VK4AYX | DL3ZM/YV5 | 18/03/81 | 15582.0 |
| VK5 | VK5KK | XE1GE | 09/04/79 | 14078.0 |
| VK6 | VK6BE | JA8BP | 30/10/58 | 8833.0 |
| VK7 | VK7IK | W4EOM | 27/04/90 | 15343.0 |
| **VK8** | **VK8RH** | **8R1AH** | **02/04/89** | **10867.9** |
| DIG | VK4KHZ | JH1WHS | 27/11/88 | 7234 |
| **2-Metre Band** | | **144-148MHz** | | |
| VK1 | VK1VP | VK4ZSH | 14/12/63 | 936.4 |
| VK2 | VK2ZRU | VK6AOM | 13/12/86 | 2697.9 |
| VK3 | VK3YLR/3 | VK6KZ/6 | 23/01/90 | 2784.2 |
| VK4 | VK4ZSH/4 | JA7OXL | 24/04/83 | 6618.8 |
| VK5 | VK5ZEE | ZL1HH | 15/01/66 | 3458.8 |
| VK6 | VK6KZ/6 | VK3YLR/3 | 23/01/90 | 2784.2 |
| VK7 | VK7ZAH | VK4ZAZ | 01/01/67 | 1910.0 |
| VK8 | VK4ZSH/8 | JA7OXL | 24/10/82 | 6460.9 |
| EME | VK3ATN | K2MWA/2 | 28/11/86 | 16761.0 |
| DIG | VK3ZJC | VK3ZCB | 28/11/90 | 268.6 |
| MOB | VK3KAJ/M | VK6BE | 25/01/86 | 2224.5 |
| **70cm Band** | | **420-460MHz** | | |
| VK2 | VK2ZAB | ZL1AKW | 13/01/88 | 2299.8 |
| VK3 | VK3ZBJ | VK6KZ/6 | 23/01/90 | 2716.9 |
| VK5 | VK4ZSH/4 | ZL2TPY | 13/01/88 | 2401.9 |
| VK5 | VK5NY | VK7JG | 21/05/85 | 995.0 |
| VK6 | VK6KZ/6 | VK3ZBJ | 23/01/90 | 2716.9 |
| VK7 | VK7JG | VK5NY | 21/05/85 | 995.0 |
| EME | VK8ZT | K2UYH | 29/01/83 | 18726.4 |
| DIG | VK3ZJC | VK3ZCB | 28/11/90 | 268.6 |

| Div | From | To | Date | Distance |
|---|---|---|---|---|
| ATV | VK3ZPA/T | VK7EM/T | 13/12/72 | 413.0 |
| MOB | VK3KAJ/M | VK6BE | 25/01/86 | 2224.5 |
| **23cm Band** | | **576-585MHz** | | |
| VK2 | VK4ZRF/2 | VK4ZSH/4 | 11/12/81 | 255.4 |
| **VK3** | **VK3ZBJ** | **VK3KAJ/5** | **25/02/89** | **382.9** |
| VK4 | VK4ZRF/4 | VK4ZSH/4 | 07/12/81 | 377.5 |
| **VK5** | **VK3KAJ/5** | **VK3ZBJ** | **25/02/89** | **382.9** |
| VK6 | VK6KZ/6 | VK6HK | 16/01/83 | 196.4 |
| MOB | VK3KAJ/M | VK3ZBJ | 26/02/89 | 122.5 |
| **23cm Band** | | **1240-1300MHz** | | |
| VK1 | VK4ZSH/1 | VK1VP/2 | 12/08/90 | 104.7 |
| VK2 | VK2BDN | ZL1AVZ | 09/12/82 | 2132.7 |
| **VK3** | **VK3ZBJ** | **VK5WG** | **18/03/89** | **2448.3** |
| VK4 | AX4NO/4 | AX4ZT/2 | 12/04/70 | 402.06 |
| VK5 | VK5MC | VK6KZ/6 | 23/01/90 | 2299.4 |
| **VK6** | **VK6WG** | **VK3ZBJ** | **18/03/89** | **2448.3** |
| VK7 | VK7ZAH | VK3AKC | 17/02/71 | 439.0 |
| EME | VK4ZT | K2UYH | 29/01/83 | 18726.4 |
| MOB | VK3KXW/M | VK3ZJC/M | 16/09/89 | 137.6 |
| **13cm Band** | | **2300-2450MHz** | | |
| VK2 | VK2ZAC/2 | VK2BDN/2 | 19/05/73 | 159.9 |
| VK3 | VK3ZHP | VK7HL | 12/01/85 | 427.3 |
| **VK5** | **VK5QR** | **VK5WG** | **17/02/78** | **1666.5** |
| **VK6** | **VK6WG** | **VK5QR** | **17/02/78** | **1666.5** |
| VK7 | VK7HL | VK3ZHP | 12/01/85 | 427.3 |
| **3cm Band** | | **3300-3600MHz** | | |
| VK2 | VK2AHC/2 | VK3SB/2 | 16/01/77 | 114.1 |
| VK3 | VK3KAJ/3 | VK3ZBJ | 25/01/86 | 244.3 |
| **VK5** | **VK5QR** | **VK5WG** | **26/01/86** | **1666.5** |
| **VK6** | **VK6WG** | **VK5QR** | **26/01/86** | **1666.5** |

| Div | From | To | Date | Distance |
|---|---|---|---|---|
| **6cm Band** | | **5650-5850MHz** | | |
| VK1 | VK4ZSH/1 | VK1VP/2 | 13/08/90 | 86.6 |
| VK2 | VK4ZSH/2 | VK2ZBW/4 | 29/04/90 | 144.3 |
| VK3 | VK4ZSH/3 | VK3ZBJ | 14/04/90 | 89.6 |
| VK4 | VK4ZSH/4 | VK4ZBW/4 | 22/04/90 | 173.4 |
| **VK5** | **VK5NT** | **VK5ZO/5** | **12/11/89** | **176.4** |
| **3cm Band** | | **10-10.5GHz** | | |
| VK2 | VK2AHC/2 | VK2SB/2) | | |
| | | VK2ZNO/2) | 12/04/75 | 114.1 |
| **VK3** | **VK3KAJ/3** | **VK3ZBJ/3** | **08/02/86** | **282.1** |
| VK4 | VK4ZNC/4 | VK4ZSH/4 | 09/11/81 | 170.6 |
| VK5 | VK5NT/5 | VK5ZO/5 | 10/06/90 | 214.6 |

VK2AHC: now VK5ZO VK2ZAL: now VK2ZPB
VK3ZPA: now VK3AU
VK3YLR: now VK3KAQ
VK3AKC R Wilkinson (deceased)

**To apply for a record**

The following information is required: Date, time, frequency, mode, signals reports and some details of equipment used; signed letters from applicants OR both QSL cards (originals or photocopies certified by another amateur) and the latitude and longitude of both stations.

All cards and other material will be returned unless the applicant indicates that the material may be kept for WIA records.

Applicants receive acknowledgement by letter and in "Amateur Radio" and the Call Book. Certificates will also be sent to all new record holders.

Send applications to the Chairman, WIA Federal Technical Advisory Committee, PO Box 300, Caulfield South, Vic 3162.

# Voice Repeaters

The columns at the right show ERP in watts, height above sea level in metres, timeout time in minutes, and operating status.

Repeater licensees or sponsors are identified by a letter code in the LICENSEE column - see the Licensee list. Any special notes, including linking information where available, are given in the NOTES column. Please send any additions or corrections to the Chairman, FTAC, PO Box 300, Caulfield South, Vic. 3162.

Key to Status (ST) codes:
A = licence application pending
O = operating
L = licensed but not on air
T = testing
P = planning/development stage

| BAND | STATE | OUTPUT FREQ | INPUT FREQ | CALL SIGN | SITE | SERVICE AREA | ST | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 METRE BAND | NEW SOUTH WALES | 29.620 | 29.520 | VK2RAH | Wollongong | | O | | | | NIL | |
| | VICTORIA | 29.640 | 29.540 | VK3RHF | Mt Dandenong | Melbourne | O | | 600 | 2.5 | VTF | 15 |
| | QUEENSLAND | 29.660 | 29.560 | VK4R?? | Brisbane | | P | | | | QRC | |
| | SOUTH AUSTRALIA | 29.620 | 29.520 | VK5RLZ | Elizabeth | Adelaide | L | 50 | 82 | | SEL | |
| | WESTERN AUSTRALIA | 29.680 | 29.580 | VK6RHF | Perth | | P | | | | WRG | |
| 6 METRE BAND | NEW SOUTH WALES | 53.575 | 52.575 | VK2RJB | Sanctuary Point | Jervis Bay | P | | | | NJB | |
| | | 53.575 | 52.575 | VK2RTM | Tamworth | Tamworth | P | | | | NTM | |
| | | 53.625 | 52.625 | VK2RSN | Mt Sugarloaf | Newcastle | O | | 400 | | NAU | |
| | | 53.675 | 52.675 | VK2RMB | Torrey Hills | Sydney | P | | | | NMW | |
| | | 53.850 | 52.850 | VK2RWI | Dural | Sydney | O | 10 | 420 | 3.5 | NWI | |
| | VICTORIA | 53.550 | 52.550 | VK3RMH | Wattle Glen | Melbourne | O | | | | VNE | |
| | | 53.575 | 52.575 | VK3RDD | Dandenong | Dandenong | O | | | | VGG | |
| | | 53.675 | 52.675 | VK3RTN | Lake Mountain | Melbourne | O | 25 | 1500 | 2.5 | VSG | 1 |
| | | 53.900 | 52.900 | VK3RMS | Mt Dandenong | Melbourne | O | 60 | 600 | 2.5 | VWI | |
| | | 53.975 | 52.975 | VK3RGM | Mt Buller | Mansfield | O | 25 | 1900 | 2.5 | VSG | 5 |
| | QUEENSLAND | 53.725 | 52.725 | VK4RGA | Amy's Peak | Gladstone | O | 25 | 920 | | QGL | |
| | | 53.725 | 53.125 | VK4RIK | Mt Haren | Cairns | P | | 480 | | QTR | |
| | | 53.775 | 52.775 | VK4R?? | Mackay | | P | | | | QMK | |

| BAND | STATE | OUTPUT FREQ | INPUT FREQ | CALL SIGN | SITE | AREA | ST | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WESTERN AUSTRALIA | 53.800 | 52.800 | VK6RTH | Tic Hill | Perth | O | 10 | 230 | | WRG | |
| | TASMANIA | 53.825 | 52.825 | VK7RMD | MtDuncan | NW Tasmania | T | 30 | 600 | 5.0 | TNA | |
| 2 METRE BAND | ACT | 146.900 | 146.300 | VK1RAC | Black Hill | Canberra | O | 60 | 870 | 4.0 | AWI | |
| | | 146.950 | 146.350 | VK1RGI | Mt Ginini | SE NSW | O | 50 | 1770 | 3.0 | AWI | |
| | NEW SOUTH WALES | 146.625 | 146.025 | VK2RBB | Byron Bay | Lismore | O | 10 | 150 | 3.0 | NSU | |
| | | 146.625 | 146.025 | VK2RLD | Liverpool | Liverpool | O | 10 | 330 | 4.5 | NLI | |
| | | 146.650 | 146.050 | VK2RCH | Mt Coramba | Coffs Harbour | O | | 300 | 3.0 | NCH | |
| | | 146.650 | 146.050 | VK2RDX | Mt Bindo | Penshurst | O | 50 | 1362 | 3.5 | NSG | |
| | | 146.650 | 146.050 | VK2RMI | Terry Hi Hi | Inverell | O | 10 | 680 | 4.0 | NNW | |
| | | 146.675 | 146.075 | VK2RCV | 5th Grafton | Lismore | P | 30 | 110 | 3.0 | NSU | |
| | | 146.675 | 146.075 | VK2RFT | Forster | Forster | P | 10 | 65 | 3.0 | NGL | |
| | | 146.700 | 146.100 | VK2RAO | Mt Canobolas | Orange | O | 50 | 1417 | 3.0 | NOA | |
| | | 146.700 | 146.100 | VK2RMU | Little Forest | Ulladulla | O | 35 | 152 | 2.5 | NMS | |
| | | 146.700 | 146.100 | VK2RPM | Middle Brother | Port Macquarie | O | 80 | 552 | 3.5 | NOX | |
| | | 146.725 | 146.125 | VK2RAG | Somersby | Gosford | O | 40 | 316 | 3.0 | NCC | 14 |
| | | 146.750 | 146.150 | VK2RFS | Mt Mumbulla | Merimbula | O | 10 | 870 | 3.5 | NFS | |
| | | 146.750 | 146.150 | VK2RTM | Mt Crawney | Tamworth | O | 20 | 1430 | 3.0 | NTM | |
| | | 146.750 | 146.150 | VK2RWG | Mt Flackney | Wagga | O | 25 | 490 | 3.0 | NWG | |
| | | 146.775 | 146.175 | VK2RTZ | Sugarloaf Ra | Port Macquarie | O | 10 | 400 | 3.0 | NWE | |
| | | 146.800 | 146.200 | VK2RCC | Needle Min | Coonabarabran | O | 60 | 1100 | 3.5 | NOR | |
| | | 146.800 | 146.200 | VK2RJC | Goonellabah | Lismore | O | 15 | 85 | 3.0 | NSU | |
| | | 146.800 | 146.200 | VK2RLE | Heathcote | Sydney | O | 100 | 240 | 3.5 | NSG | |
| | | 146.800 | 146.200 | VK2RTD | Mt Kendall | Tumut | O | 36 | 930 | 4.0 | NTU | |
| | | 146.825 | 146.225 | VK2RET | Bundook Min | Taree | O | 25 | 435 | 3.0 | NTR | |
| | | 146.825 | 146.225 | VK2RHR | Mt Gibraltar | Southern Highlands | P | 10 | 862 | 3.0 | NSO | |
| | | 146.850 | 146.250 | VK2RAB | Mt Kaputar | Gunnedah | O | 10 | 1225 | 4.0 | NTM | |
| | | 146.850 | 146.250 | VK2RAW | Mt Murray | Wollongong | O | 100 | 769 | 4.0 | NIL | |
| | | 146.850 | 146.250 | VK2RGF | Mt Binger | Griffith | O | 15 | 450 | 2.5 | NGR | |
| | | 146.875 | 146.275 | VK2RMB | Terrey Hills | Sydney | O | 50 | 150 | 3.0 | NMW | |
| | | 146.900 | 146.300 | VK2RAN | Mt Sugarloaf | Newcastle | O | 70 | 300 | 5.0 | NHB | |
| | | 146.900 | 146.300 | VK2RRT | Boone | Mount Condobolin | O | 10 | 441 | 5.0 | NAL | |
| | | 146.925 | 146.325 | VK2RGR | North | Ryde Gladesville | O | 10 | 30 | 2.5 | NGA | |
| | | 146.950 | 146.350 | VK2RNE | Mt Rumbee | Glen Innes | O | 10 | 1503 | 4.0 | NNW | |
| | | 146.975 | 146.375 | VK2RAN | Mt Sugarloaf | Newcastle | O | 10 | 300 | 5.0 | NLH | 19 |
| | | 147.000 | 146.400 | VK2RWI | Parramatta | Sydney | O | 120 | 240 | 3.5 | NWI | |
| | | 147.025 | 147.625 | VK2ROT | Paddington | Sydney | O | 20 | 90 | 3.0 | NOT | |
| | | 147.050 | 147.650 | VK2RBM | Mt Druitt | Blue Mts/Nepean | O | 20 | 900 | 3.5 | NBM | |
| | | 147.075 | 147.675 | VK2RCZ | Mt Druitt | West Sydney | A | 20 | 150 | 3.0 | NCA | |
| | | 147.075 | 147.675 | VK2RPW | Nowendoc | Walcha | A | 25 | 1450 | 2.0 | NWR | |
| | | 147 100 | 147 700 | VK2RWM | Grenfell | Grenfell | O | 70 | 576 | 3.0 | NCW | |
| | | 147 100 | 147 700 | VK2RZL | Mt Arthur | Tenilba | L | 10 | 800 | 3.0 | NWE | |
| | | 147 125 | 147 725 | VK2RWS | Portable | Statewide | O | | | | NWW | |
| | | 147 150 | 147 750 | VK2RWS | St Leonards | Sydney | O | 10 | 140 | 30s | NWW | 14 |
| | | 147 175 | 147 775 | VK2RWS | St Leonards | Sydney | O | | | | NWW | |
| | | 147.200 | 147.800 | VK2RSD | Mt Cambewarra | Illawarra | O | 10 | 600 | 4.0 | NSH | |
| | | 147.200 | 147.800 | VK2RWH | Warners Bay Hunter-New | England | O | | | | NWW | |
| | | 147.225 | 147.825 | VK2RST | Lane Cove | Sydney | O | 10 | 25 | 4.0 | NGA | 20 |
| | | 147.250 | 147.850 | VK2RNS | Hornsby Heights | Sydney | O | 50 | 225 | 3.5 | NHO | |
| | | 147.275 | 147.875 | VK2RIL | Sublime | Point Wollongong | O | 10 | 300 | 4.0 | NIL | 19 |
| | | 147.275 | 147.875 | VK2RMO | Tamworth | Tamworth | A | | | | NTM | |
| | | 147.300 | 147.900 | VK2RTS | Winmalee | Blue Mts | O | 25 | 370 | 5.0 | NBA | |
| | | 147.375 | 147.975 | VK2RGL | Cabbage | Tree Tuncurry | O | 25 | 650 | 3.0 | NGL | |
| | | 147.925 | 147.325 | VK2RGN | Mt Gray | Goulburn | O | 20 | 750 | 3.0 | NGN | |
| | VICTORIA | 146.650 | 146.050 | VK3REG | Donald's Knob | East Gippsland | O | 40 | 560 | 2.5 | VWE | 2 |
| | | 146.650 | 146.050 | VK3RGV | Mt Wombat | Shepparton | O | 60 | 300 | 3.5 | VWI | |
| | | 146.700 | 146.100 | VK3RML | Mt Dandenong | Melbourne | O | 100 | 600 | 2.5 | VWI | |
| | | 146.700 | 146.100 | VK3RNC | Mt Mitta | Mitta Corryong | O | | 40 | 2.5 | VWI | |
| | | 146.700 | 146.100 | VK3RON | Ouyen | Ouyen | O | | 40 | 2.5 | VWI | |
| | | 146.750 | 146.150 | VK3RBA | Mt Buninyong | Ballarat | O | 15 | 750 | 3.0 | VWI | |
| | | 146.775 | 146.175 | VK3RUG | Mt Eildon | Alexandra | O | 50 | 660 | 2.5 | VBG | 5 |
| | | 146.800 | 146.200 | VK3RLV | Mt Tassie | Latrobe Valley | O | 80 | 730 | 2.5 | VWE | |
| | | 146.800 | 146.200 | VK3RMA | Mildura | Mildura | O | 50 | 50 | 2.5 | VWX | |
| | | 146.850 | 146.250 | VK3RMN | Kinglake | Melbourne | P | | | | VWI | |
| | | 146.850 | 146.250 | VK3RSB | Chesney Vale | Benalla | T | | 80 | 2.5 | VWI | |
| | | 146.900 | 146.300 | VK3RBS | Smeaton's Hill | Ballarat Nth | O | | 30 | 2.5 | VWI | |
| | | 146.900 | 146.300 | VK3REB | Nungurner | Bairnsdale | O | | 30 | 2.5 | VWI | 2 |
| | | 146.900 | 146.300 | VK3RSH | Swan Hill | Swan Hill | O | 80 | 60 | 2.5 | VSH | |
| | | 146.950 | 146.350 | VK3RWZ | Mt William | Grampians | O | 50 | 1170 | 2.5 | VWZ | |
| | | 146.975 | 146.375 | VK3RSR | Portable | Statewide | O | | adj | | VSA | |
| | | 147.000 | 146.400 | VK3RGL | Mt Anakie | Geelong | O | 160 | 400 | 2.5 | VWI | |
| | | 147.000 | 146.400 | VK3RNE | Mt Big Ben | Wodonga | O | 100 | 1159 | 2.5 | VWY | |
| | | 147 025 | 147.625 | VK3RGS | Mt Fatigue | Toora | O | 60 | | 2.5 | VWI | |
| | | 147.025 | 147.625 | VK3RMK | Mt Kerang | Charlton | P | | | | VWI | |
| | | 147.050 | 147.650 | VK3RCG | Camberwell | Eastern suburbs | P | | | | VCG | |
| | | 147.050 | 147.650 | VK3RGO | Mt Livingstone | Omeo | O | 40 | | 2.5 | VWI | 2 |
| | | 147.050 | 147.650 | VK3RVL | Robinvale | Robinvale | O | 20 | | 2.5 | VWI | |
| | | 147.050 | 147.650 | VK3RWL | Mt Warrnambool | Warrnambool | O | 40 | | .5 | VWI | |
| | | 147.075 | 147.675 | VK3RCR | Montrose | Melbourne | O | | | | | |
| | | 147 100 | 147 700 | VK3RPB | Mt Porepunkah | Bright | O | 5 | | 2.5 | VWI | |
| | | 147 100 | 147 700 | VK3RSG | Bass Hill | South Gippsland | O | 40 | | 3.0 | VWI | |
| | | 147 100 | 147 700 | VK3RWA | Ben Nevis | Ararat | P | 30 | | 2.5 | VWI | |
| | | 147 125 | 147 725 | VK3RGC | Mpntpelier | Geelong | O | 40 | | 2.5 | VWI | |
| | | 147 150 | 147 750 | VK3RCV | Mt Alexander | Bendigo | O | 40 | 730 | 3.0 | VWM | |
| | | 147 150 | 147 750 | VK3REM | Marimingo Hill | Mallacoota | P | | | | VWI | |
| | | 147 175 | 147 775 | VK3REC | Olinda | Melbourne | O | 40 | 600 | 2.5 | VEC | |
| | | 147.225 | 147.825 | VK3RWG | Mt Baw Baw | West Gippsland | O | 20 | , | 2.5 | VWE | |
| | | 147.250 | 147.850 | VK3RMM | Mt Macedon | Melbourne | O | 100 | 1011 | 2.5 | VWW | |
| | | 147.275 | 147.875 | VK3ROW | Mt Cowley | Otway Ranges | O | | | | VWI | |
| | | 147.300 | 147 900 | VK3RWP | Portable | Statewide | O | 20 | | | VWW | |
| | QUEENSLAND | 146.625 | 146.025 | VK4RGT | Mt Maurice | Gladstone | O | 10 | 225 | | QGL | |
| | | 146.650 | 146.050 | VK4ROM | Grafton Range | Roma | O | 30 | 550 | | QRO | |
| | | 146.675 | 146.075 | VK4RET | Bunya Mtns | Darling Downs | O | | 1140 | | QDA | |

| BAND | STATE | OUTPUT FREQ | INPUT FREQ | CALL SIGN | SITE | SERVICE AREA | ST | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 146.675 | 146.075 | VK4RTA | Longlands | Gap Atherton | O | 75 | 1170 | | QCA | |
| | | 146.700 | 146.100 | VK4RAR | Mt Archer | Rockhampton | O | 50 | 606 | 4.0 | QWI | |
| | | 146.700 | 146.100 | VK4RAT | Mt Stuart | Townsville | O | 100 | 564 | 2.5 | QTO | |
| | | 146.700 | 146.100 | VK4RGC | Springbrook | Gold Coast | O | 50 | 1040 | | QGC | |
| | | 146.700 | 146.100 | VK4RMI | Four Mile Hill | Mt Isa | O | 20 | 500 | 3.5 | QMI | |
| | | 146.725 | 146.125 | VK4RSB | Mt Gordon | Bowen | O | 50 | 20 | | QBW | |
| | | 146.750 | 146.150 | VK4RDD | Mt Lofty | Toowoomba | O | 30 | 715 | 4.5 | QDD | |
| | | 146.775 | 146.175 | VK4RDY | Mt Dryander | Mackay/Bowen | O | | 820 | | QMK | |
| | | 146.800 | 146.200 | VK4RBU | Mt Goonenemen | Bundaberg | O | 20 | 620 | 4.0 | QBU | |
| | | 146.800 | 146.200 | VK4RTI | Thursday Is | Thursday Is | ? | | | | | |
| | | 146.800 | 146.200 | VK4RWP | Weipa Cape | York | ? | | | | | |
| | | 146.825 | 146.225 | VK4RDT | Gabbinbah | Toowoomba | P | 20 | 723 | | QDD | |
| | | 146.850 | 146.250 | VK4RSC | Buderim | Sunshine Coast | O | 40 | 450 | | QSC | |
| | | 146.875 | 146.275 | VK4RCH | Red Hill | Chinchilla | O | 150 | 340 | | QCC | |
| | | 146.900 | 146.300 | VK4RAI | Mt Stradbroke | Ipswich | O | 70 | 120 | 4.5 | QIP | |
| | | 146.900 | 146.300 | VK4RGA | Amy'sPeak | Gladstone | O | 100 | 1010 | 4.0 | QGL | |
| | | 146.925 | 146.325 | VK4RRC | Mount Mee | Redcliffe | O | 25 | 520 | | QRC | |
| | | 146.950 | 146.350 | VK4RBD | Blackdown T'ld | Blackwater | O | 35 | | | QCH | |
| | | 146.950 | 146.350 | VK4RCA | Bellenden Ker | Cairns | O | 100 | 1650 | 4.0 | QCA | |
| | | 146.975 | 146.375 | VK4RRR | Blue Mtn | Sarina | O | 50 | 600 | 3.0 | QCH | |
| | | 147.000 | 146.400 | VK4RBN | Mt Glorious | Brisbane | O | 60 | 630 | 2.0 | QBV | |
| | | 147.000 | 146.400 | VK4RMK | Black Mtn | Mackay | O | 25 | 60 | 5.0 | QMK | |
| | | 147.100 | 147.700 | VK4RGY | Mt Boulder | Gympie | O | 20 | 496 | 4.0 | QGY | |
| | | 147.150 | 147.750 | VK4RAG | Spring Hill | Brisbane | O | 60 | 90 | 3.5 | QWW | |
| | | 147.150 | 147.750 | VK4RWI | portable | statewide | O | 50 | | | QWW | |
| | | 147.300 | 147.900 | VK4RQT | Mt Glorious | Brisbane | O | 50 | 630 | 3.5 | QSA | |
| | | 147.850 | 147.050 | VK4RBT | Mt Cotton | Brisbane | O | 50 | 233 | 4.5 | QAR | 19 |
| | | 147.875 | 147.075 | VK4RBT | Mt Cotton | Brisbane | O | 50 | 233 | 4.5 | QAR | 19 |
| | | 147.825 | 147.225 | VK4RDT | Gabbinbah | Toowoomba | P | 20 | 723 | | QDD | |
| | | 147.825 | 147.225 | VK4REG | Manly West | Brisbane | O | 50 | | | QRX | |
| | | 147.850 | 147.250 | VK4RCB | Mt Devlin | Collinsville | O | | | | | |
| | | 147.950 | 147.350 | VK4RII | Mt Inkerman | Burdekin | O | 30 | 218 | | QTO | |
| | | 147.975 | 147.375 | VK4RWB | Mt Murchison | Biloela | O | 25 | | | | |
| | SOUTH AUSTRALIA | 146.650 | 146.050 | VK5RNC | Naracoorte | Naracoorte | O | 25 | 60 | 2.5 | SWI | |
| | | 146.700 | 146.100 | VK5RMN | The Bluff Port | Pirie | O | 55 | 730 | 5.0 | SWI | 3 |
| | | 146.750 | 146.150 | VK5RAC | Williams Hill | Port Lincoln | O | | | | | |
| | | 146.800 | 146.200 | VK5REP | Coolanie | Cowell-Eyre Pen | O | 60 | 500 | 4.0 | SWI | 3 |
| | | 146.825 | 146.225 | VK5RBV | Angaston | Barossa Valley | O | 100 | 400 | 3.5 | SBA | 4 |
| | | 146.850 | 146.250 | VK5RHO | Houghton | Adelaide | O | 50 | 410 | 3.5 | SWI | |
| | | 146.900 | 146.300 | VK5RMG | The Bluff | Mt Gambier | O | 25 | 100 | 5.0 | SWI | |
| | | 147.000 | 146.400 | VK5RAD | Crafers | Adelaide | O | 60 | 610 | 3.5 | SWI | |
| | | 147.925 | 147.325 | VK5RLD | Berri | Riverland | O | 25 | 66 | 5.0 | SWI | |
| | WESTERNAUSTRALIA | 146.625 | 146.025 | VK6R77 | Stirling | | P | | | | WRG | |
| | | 146.625 | 146.025 | VK6RAT | Forbs Hill | Rottnest Island | P | | | | WRG | |
| | | 146.650 | 146.050 | VK6RBY | Bunbury | Bunbury | O | 25 | 20 | 5.0 | WSW | |
| | | 146.675 | 146.075 | VK6RCA | Whim Creek | Whim Creek | O | | | | WNW | |
| | | 146.675 | 146.075 | VK6RNR | Hudgejah | Northampton | O | 25 | 280 | 4.0 | WGE | |
| | | 146.700 | 146.100 | VK6RAP | Roleystone | Perth | O | 40 | 360 | 4.0 | WRG | |
| | | 146.725 | 146.125 | VK6RAL | Albany | Albany | O | | | | WSG | |
| | | 146.750 | 146.150 | VK6RES | Esperance | Esperance | P | | | | WES | |
| | | 146.750 | 146.150 | VK6RKI | Kookan Island | Kookan Island | O | 40 | 300 | 5.0 | WNW | |
| | | 146.750 | 146.150 | VK6RLM | Leemurdie | Perth | O | 20 | 340 | 4.0 | WRG | |
| | | 146.800 | 146.200 | VK6RTH | Tic Hill | Perth | O | 60 | 250 | 4.0 | WRG | |
| | | 146.800 | 146.200 | VK6RWP | Karratha | Karratha | O | | | | WNW | |
| | | 146.825 | 146.225 | VK6RAA | Mt Barker | Albany | O | 40 | 430 | 3.0 | WSG | |
| | | 146.850 | 146.250 | VK6REX | Exmouth | Exmouth | O | 25 | 385 | 3.0 | WNW | |
| | | 146.850 | 146.250 | VK6RKB | Kambalda | Kambalda | O | 30 | | | WGO | |
| | | 146.875 | 146.275 | VK6RBR | O'Connor | Perth-Fremantle | P | | | | WSR | |
| | | 146.900 | 146.300 | VK6RMW | Mt William | Bunbury | O | 20 | 520 | 4.0 | WRG | |
| | | 146.950 | 146.350 | VK6RPD | Fremantle | Fremantle | O | 45 | 65 | 3.0 | WRG | |
| | | 146.950 | 146.350 | VK6RSG | Shay Gap | Shay Gap | O | | | | WNW | |
| | | 146.975 | 146.375 | VK6REE | Portable | (sec) Statewide | O | 20 | | 4.0 | WRG | |
| | | 147.000 | 146.400 | VK6RAK | Kalgoorlie | Kalgoorlie | O | 40 | 400 | 5.0 | WGO | |
| | | 147.000 | 146.400 | VK6RAW | Fairfield | Katanning | O | 25 | | 5.0 | WKA | |
| | | 147.000 | 146.400 | VK6REE | Portable (prt) | Statewide | O | 20 | | 4.0 | WRG | |
| | | 147.000 | 146.400 | VK6RGN | Geraldton | | O | 16 | 400 | 5.0 | WGE | |
| | | 147.000 | 146.400 | VK6RNW | Pt Hedland | Port Hedland | O | | | | WNW | |
| | | 147.100 | 147.700 | VK6RWC | Millendon | Perth | O | | | | WWA | 11 |
| | | 147.125 | 147.725 | VK6RMB | Gin Gin | Gin Gin | P | | | | WSA | |
| | | 147.150 | 147.750 | VK6RMJ | Manjimup | | P | | | | WSW | |
| | | 147.175 | 147.675 | VK6RIC | Portable emerg. | Statewide | O | | | | WWW | |
| | | 147.200 | 147.800 | VK6RCT | Cataby | Cataby | O | 10 | 200 | 4.0 | WRG | 12 |
| | | 147.225 | 147.825 | VK6RHW | Hoddywell | Toodyay | O | 30 | 450 | 3.0 | WRG | 12 |
| | | 147.250 | 147.850 | VK6RMG | Saddleback | Boddington | O | 20 | 630 | 4.0 | WRG | |
| | | 147.275 | 147.875 | VK6RWM | Wyalkatchem | Wyalkatchem | O | 20 | 400 | 4.0 | WRG | 12 |
| | | 147.300 | 147.900 | VK6REN | Enneabba | | P | | | | WRG | |
| | | 147.350 | 147.950 | VK6RBN | Busselton | Busselton | O | 10 | 130 | 4.0 | WRG | |
| | TASMANIA | 146.625 | 146.025 | VK7RAD | Mt Duncan | NW Tas | O | 3 | 600 | | TWU | 19 |
| | | 146.700 | 146.100 | VK7RHT | Mt Wellington | Hobart | O | 70 | 1310 | 3.0 | TWS | |
| | | 146.750 | 146.150 | VK7RNW | Lonah NW | Tasmania | O | 30 | 160 | 5.0 | TWU | |
| | | 146.900 | 146.300 | VK7REC | Snow Hill | East Coast | O | 10 | 970 | | TEC | |
| | | 147.000 | 146.400 | VK7RAA | Mt Barrow | Launceston | O | 60 | 1400 | | TWN | |
| | | 147.075 | 147.675 | VK7RWC | Mt Reid | West Coast | O | 10 | 1200 | 3.0 | TWC | |
| | | 147.250 | 147.850 | VK7RAF | Mt Faulkner | Hobart | O | 25 | | | | |
| | NORTHERN TERRITORY | 146.650 | 146.050 | VK8RMS | Nhulunbuy | Gove | O | 25 | 150 | | SGR | |
| | | 146.700 | 146.100 | VK8RDA | Karama | Darwin | O | 15 | 200 | 8.5 | SDA | |
| | | 146.950 | 146.350 | VK8RCA | Alice Springs | Alice Springs | O | 25 | 300 | 3.0 | SWI | |
| | | 147.000 | 146.400 | VK8RTE | Palmerston | Darwin | O | 15 | 350 | 8.5 | SDA | |
| 70 CM BAND | ACT | 438.375 | 433.375 | VK1RIR | Isaacs Ridge | Canberra | O | 60 | 790 | 3.5 | AWI | |
| | | 438.525 | 433.525 | VK1RGI | Mt Ginini SE | NSW | O | 60 | 1770 | 3.5 | AWI | |
| | NEW SOUTH WALES | 438.025 | 433.025 | VK2RTK | High Range | Southern Highlands | O | 40 | 827 | 2.0 | NSO | |
| | | 438.075 | 433.075 | VK2RAG | Somersby | Gosford-Wyong | O | 120 | 323 | 3.0 | NCC | |

| BAND | STATE | OUTPUT FREQ | INPUT FREQ | CALL SIGN | SITE | SERVICE AREA | ST | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 438.125 | 433.125 | VK2RMU | Little Forest | Milton | L | 18 | 330 | 3.0 | NMS | |
| | | 438.175 | 433.175 | VK2RMB | Terrey Hills | Sydney | O | 5 | 150 | 3.0 | NMW | |
| | | 438.175 | 433.175 | VK2RNT | Doughboy | Mtn Armidale | O | | | 3.0 | NAD | |
| | | 438.225 | 433.225 | VK2RPW | Nowendoc | Walcha | A | 25 | 1450 | 2.0 | NWR | |
| | | 438.225 | 433.225 | VK2RUW | Port Kembla | Wollongong | O | 40 | 100 | 4.0 | NIL | |
| | | 438.275 | 433.275 | VK2RWS | Chatswood | Sydney | O | 2 | 140 | 30s | NWW | |
| | | 438.325 | 433.325 | VK2REE | Mt Marie | Taree | O | 4 | 930 | 3.0 | NTR | |
| | | 438.325 | 433.325 | VK2RGN | Mt Gray | Goulburn | L | 10 | 750 | 3.5 | NGN | |
| | | 438.325 | 433.325 | VK2RWM | Grenfell | Grenfell | P | 25 | 575 | 3.0 | NCW | |
| | | 438.375 | 433.375 | VK2RUT | Kurrajong | Springwood | O | 15 | 500 | 3.0 | NBM | |
| | | 438.425 | 433.425 | VK2RUH | Hurstville | Sydney | O | 25 | 100 | 4.0 | NSG | |
| | | 438.475 | 433.475 | VK2RRS | Chatswood | Gladesville | O | 10 | 50 | 4.0 | NGA | |
| | | 438.525 | 433.525 | VK2RPM | Middle Brother | Pt Macquarie | L | 10 | 552 | 3.0 | NOX | |
| | | 438.525 | 433.525 | VK2RWI | Dural | Sydney | O | 48 | 240 | 3.5 | NWI | |
| | | 438.625 | 433.625 | VK2RUM | New Lambton | Newcastle | O | 5 | 50 | 3.0 | NAG | |
| | | 438.675 | 433.675 | VK2RAN | Mt Sugarloaf | Newcastle | O | 80 | 300 | 5.0 | NHB | |
| | | 438.675 | 433.675 | VK2RSC | Mt Nardi | Lismore | O | 10 | 300 | 3.0 | NSU | |
| | | 438.675 | 433.675 | VK2RTW | Willans Hill | Wagga | ? | 10 | | | NWG | |
| | | 438.725 | 433.725 | VK2RIL | Sublime Point | Wollongong | O | 10 | 398 | 4.0 | NIL | |
| | | 439.275 | 434.275 | VK2RSD | Mt Cambewarra | Nowra | P | | 800 | | NSH | |
| | | 439.375 | 434.375 | VK2RTM | Tamworth | Tamworth | P | | | | NTM | |
| | | 439.425 | 434.425 | VK2RCZ | Mt Druitt | West Sydney | L | 20 | 150 | 3.0 | NCA | |
| | | 439.575 | 434.575 | VK2RJB | Sanctuary Point | Jervis Bay | A | | | | NJB | |
| | VICTORIA | 438.025 | 433.025 | VK3R?? | Melbourne | City | P | | | | VWI | |
| | | 438.075 | 433.075 | VK3RMU | Mt St Leonard | Melbourne | O | 200 | 1028 | 2.5 | VWI | |
| | | 438.175 | 433.175 | VK3RUG | Mt Buller | Alexandra | O | 80 | 650 | 2.5 | VSG | 1 |
| | | 438.225 | 433.225 | VK3ROU | Mt Dandenong | Melbourne | O | 100 | 600 | 2.5 | VWI | |
| | | 438.275 | 433.275 | VK3RWE | Portable | Statewide | O | | | | VWW | |
| | | 438.375 | 433.375 | VK3RGU | Carrajung | Gippsland | O | 60 | | 4.0 | VWE | |
| | | 438.425 | 433.425 | VK3RCU | Mt Mollagul | Bendigo | O | | | | VWI | |
| | | 438.475 | 433.475 | VK3RBU | Mt Hollowback | Ballarat | T | 40 | | 2.5 | VWI | |
| | | 438.525 | 433.525 | VK3RAD | Mitcham | Melbourne | O | 80 | 100 | 2.5 | VBG | 1 |
| | | 438.525 | 433.525 | VK3RNU | Mt Stanley | Wangaratta | O | 60 | 1051 | 2.5 | VWI | |
| | | 438.525 | 433.525 | VK3RRU | Merbein | Mildura | O | 20 | | 2.5 | VWI | |
| | | 438.625 | 433.625 | VK3RWI | Portable | Statewide | O | 5 | | | VWW | |
| | | 438.675 | 433.675 | VK3RWU | Mt William | Grampians | O | 100 | 1170 | 3.0 | VWI | |
| | | 438.750 | 433.750 | VK3RHF | Mt Dandenong | Melbourne | O | | 600 | 2.5 | VTF | 15 |
| | | 439.275 | 434.275 | VK3RMM | Mt Macedon | Melbourne | O | 100 | 1011 | 3.0 | VWW | |
| | | 439.375 | 434.375 | VK3RBE | Glen Waverley | Melbourne | O | | | | VSU | |
| | | 439.425 | 434.425 | VK3RDU | Mt Wombat | NE Victoria | O | | 800 | | VWI | |
| | | 439.575 | 434.575 | VK3RGL | Mt Anakie | Geelong | O | | 60 | 2.5 | VWI | |
| | | 439.675 | 434.675 | VK3RZU | Mt Buller | Mansfield | T | | 1800 | | VWI | |
| | | 439.725 | 434.725 | VK3RPU | Arthur's Seat | Melbourne | O | 40 | | 2.5 | VWI | |
| | | 439.875 | 434.875 | VK3RSU | Mt Major | Shepparton | L | | | | VWI | |
| | QUEENSLAND | 438.025 | 433.025 | VK4RTO | Mt Tambourine | Brisbane | O | 50 | 600 | | QBA | |
| | | 438.075 | 433.075 | VK4RSC | Buderim | Sunshine Coast | O | 20 | 450 | | QSC | |
| | | 438.225 | 433.225 | VK4RAT | Mt Stuart | Townsville | O | 10 | 564 | | QTO | |
| | | 438.225 | 433.225 | VK4RDG | Mt Archer | Rockhampton | O | 25 | 606 | | QWC | |
| | | 438.225 | 433.225 | VK4RGC | Springbrook | Gold Coast | O | 50 | 500 | 3.5 | QGC | |
| | | 438.375 | 433.375 | VK4RWM | Ipswich Ipswich | | O | | 560 | | QIP | |
| | | 438.425 | 433.425 | VK4RMU | Mt Dryander | Mackay/Bowen | O | | 820 | | QMK | |
| | | 438.475 | 433.475 | VK4R0X | Maleny SE | Qld | O | | | | QRX | |
| | | 438.500 | 433.500 | VK4RHR | Drummond | Range Clermont | O | 50 | 520 | | QCH | |
| | | 438.525 | 433.525 | VK4RBC | Mt Coot-tha | Brisbane | O | 20 | 560 | 2.0 | QBV | |
| | | 438.625 | 433.625 | VK4RAG | Spring Hill | Brisbane | O | 20 | 90 | | QWW | |
| | | 438.625 | 433.625 | VK4RWI | Portable | statewide | O | 50 | | | QWW | |
| | | 438.675 | 433.675 | VK4RBU | Mt Goonaneman | Sundsberg | O | 10 | 620 | | QBU | |
| | | 438.700 | 433.700 | VK4RET | Bunya Mtns | Darling Downs | O | 75 | 1000 | 5.0 | QDA | |
| | | 438.625 | 433.625 | VK4RGY | MtBoulder | Gympie | O | 20 | 496 | | QGY | |
| | | 438.675 | 433.675 | VK4RMC | Mt Corella | Gympie | O | | | | | |
| | | 438.950 | 433.950 | VK4RBA | Redbank | Plains/Redbank | O | 10 | 160 | | QBA | |
| | | 439.275 | 434.275 | VK4RDU | Picnic Point | Toowoomba | O | | 710 | | QDD | |
| | | 439.350 | 433.350 | VK4RIK | Mt Haren | Cairns | O | 5 | 460 | | QTR | |
| | | 439.900 | 433.900 | VK4REX | Darlington | Rs Beenleigh | O | 20 | | | | |
| | | 439.950 | 433.950 | VK4RIY | Mt Kynoch | Toowoomba | O | | | | | |
| | SOUTHAUSTRALIA | 438.325 | 433.325 | VK5ROH | Mt Gambier | Mt Gambier | O | 15 | 136 | 3.5 | SWI | |
| | | 438.425 | 433.425 | VK5RBV | Angaston | Barossa Valley | O | 100 | 400 | 3.5 | SBA | 4 |
| | | 438.525 | 433.525 | VK5RVP | Crafers | Adelaide | O | 30 | 590 | 3.0 | SWI | |
| | WESTERNAUSTRALIA | 438.225 | 433.225 | VK6RTH | TicHill | Perth | O | | 230 | | WRG | |
| | | 438.525 | 433.525 | VK6RUF | Roleystone | Perth | O | 20 | 360 | | WRG | 12 |
| | | 438.675 | 433.675 | VK6RBN | Busselton | Busselton | P | 130 | | | WRG | |
| | TASMANIA | 438.500 | 433.500 | VK7RIN | Barren Tier | Central Tas | O | 25 | 1200 | | TAR | |
| | | 438.550 | 433.550 | VK7RAB | Mt Arthur NE | Tasmania | O | 6 | 1190 | | TW | |
| | | 438.600 | 433.600 | VK7RTC | Mt Nelson | Hobart | O | 6 | | | TAR | |
| | | 438.650 | 433.650 | VK7RAC | Ridgeley NW | Tasmania | O | 3 | 250 | 5.0 | TWU | |
| | NORTHERN TERRITORY | 438.275 | 433.275 | VK8RDU | Darwin | Darwin | O | 8 | 200 | 3.0 | SDA | |
| 23CM BAND | NEW SOUTH WALES | 1261.100 | 1293.100 | VK2RJB | Sanctuary Point | Jervis Bay | A | | | | NJB | |
| | | 1261.750 | 1293.750 | VK2RWI | Dural | Sydney | O | 10 | 240 | 3.0 | NWI | |
| | VICTORIA | 1261.??? | VK3RMU | Mt St | Leonard | Melbourne | P | | 1028 | | VWI | |
| | QUEENSLAND | 1261.650 | 1293.650 | VK4REX | Darlington | Rs Beenleigh | O | 10 | | | | |
| | SOUTH | AUSTRALIA | 1297.??? | VK5RWH | Adelaide | | O | 25 | 200 | 3.0 | SST | 18 |

# Packet Radio Repeaters and BBS Systems

The columns at the right show ERP in watts, height above sea level in metres, timeout time in minutes, and operating status. Licensees or sponsors are identified by a letter code in the LICENSEE column - see the Licensee list. Please send any additions or corrections to the Chairman, FTAC, PO Box 300, Caulfield South, VIC 3162.

Key to STATUS codes  A = licence application pending  O = operating
L = licensed but not on air  T = testing
P = planning/development stage

Note: In New South Wales, many systems are to move from 147 MHz to 144 MHz. he proposed 44 MHz frequencies are shown, marked P in the STATUS column.

| STATE | FREQUENCY | CALL SIGN | SITE | SERVICE AREA | STATUS | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| ACT | 144.800 | VK1RGI | Mt Ginini | SE NSW | O | 60 | 1770 | | AWI | 8 |
| NEW SOUTH WALES | 144.700 | VK2RAB | Mt Kaputar | Tamworth-Narrabri | P | | | | NTM | |
| | 144.700 | VK2RAG | Somersby | Gosford-Wyong | P | 50 | 313 | 3.0 | NCC | 16 |
| | 144.700 | VK2RAY | Albury | Albury | P | | | | NTC | |
| | 144.725 | VK2RDX | Mt Bindo | Blue Mtns West | O | 20 | 1362 | 3.5 | NSG | |
| | 144.750 | VK2RAB | Mt Kaputar | Tamworth-Narrabri | P | | | | NTM | 17 |
| | 144.750 | VK2RGN | Goulburn | | P | | | | | |
| | 144.750 | VK2RTM | Mt Crawney | Tamworth | O | | | | NTM | |
| | 144.775 | VK2RAW | Mt Murray | Wollongong | P | 50 | 769 | 1.0 | NIL | 16 |
| | 144.775 | VK2RPW | Nowendoc | Walcha | A | | | | NWR | |
| | 144.775 | VK2RWG | Wagga | | P | | | | | |
| | 144.800 | VK2RMB | Terrey Hills | Sydney | O | 25 | 150 | 10s | NMW | |
| | 144.825 | VK2R?? | Bathurst | | P | | | | | |
| | 144.825 | VK2RFS | Bega | | P | | | | | |
| | 144.825 | VK2RGF | Mt Binger | Griffith | P | | 450 | | NGR | |
| | 144.825 | VK2RPN | Teralba | Newcastle | P | 10 | 400 | | NWE | 16 |
| | 144.850 | VK2RLO | Mt Lookout | | P | | | | NSU | |
| | 144.850 | VK2RPT | Mt Tumorrama | Tumut | P | 20 | 1231 | 5.0 | NTU | |
| | 144.850 | VK2RWI | Dural | Sydney | O | 10 | 240 | 30s | NWI | |
| | 144.875 | VK2RAO | Mt Canobolas | Orange | P | 20 | 1417 | 30s | NOA | |
| | 144.875 | VK2RPL | Mt Nardi | Lismore | P | 25 | 65 | 3.0 | NSU | |
| | 144.875 | VK2RPM | Middle Brother | Port Macquarie | O | | 552 | | NOX | |
| | 144.875 | VK2RSD | Mt Cambewarra | Nowra | P | | 600 | | NSH | |
| | 144.900 | VK2RCC | Needle Mtn | Beaucubbin | O | | | | NOR | |
| | 144.900 | VK2RCH | Mt Coramba | Coffs Harbour | P | | | | NCH | |
| | 144.900 | VK2RMU | Little Forest | Milton | P | | | | NMS | |
| | 144.900 | VK2RPH | Hornsby | Sydney | O | 10 | 200 | | NHO | |
| | 144.925 | VK2RET | Taree | Taree | P | | | | NTR | |
| | 144.925 | VK2RPS | High Range | Mittagong | P | 50 | 827 | | NSO | |
| | 145.050 | VK2RPL | Mt Nardi | Lismore | O | 25 | 65 | 3.0 | NSU | |
| | 147.575 | VK2RAB | Mt Kaputar | Tamworth-Narrabri | O | | | | NTM | |
| | 147.575 | VK2RAO | Mt Canobolas | Orange | O | 20 | 1417 | 30s | NOA | |
| | 147.575 | VK2RAW | Mt Murray | Wollongong | O | 50 | 769 | 1.0 | NIL | 16 |
| | 147.575 | VK2RCH | Mt Coramba | Coffs Harbour | O | | | | NCH | |
| | 147.575 | VK2RDX | Mt Bindo | Blue Mtns West | O | 20 | 1362 | 3.5 | NSG | |
| | 147.575 | VK2RET | Taree | Taree | P | | | | NTR | |
| | 147.575 | VK2RGF | Mt Binger | Griffith | O | | 450 | | NGR | |
| | 147.575 | VK2RLO | Mt Lookout | | O | | | | NSU | |
| | 147.575 | VK2RMU | Little Forest | Milton | O | | | | NMS | |
| | 147.575 | VK2RPL | Mt Nardi | Lismore | O | 25 | 65 | 3.0 | NSU | |
| | 147.575 | VK2RPN | Teralba | Newcastle | O | 10 | 400 | | NWE | 16 |
| | 147.575 | VK2RPS | High Range | Bowral | O | 50 | 827 | | NSO | |
| | 147.575 | VK2RPT | Mt Tumorrama | Tumut | O | 20 | 1231 | 5.0 | NTU | |
| | 147.575 | VK2RPW | Mt Grundy | Walcha | O | | | | NWR | |
| | 147.575 | VK2RSD | Mt Cambewarra | Nowra | O | | 600 | | NSH | |
| | 147.575 | VK2RTM | Mt Crawney | Tamworth | O | | | | NTM | |
| | 147.600 | VK2RAG | Somersby | Gosford-Wyong | O | 50 | 313 | 3.0 | NCC | 16 |
| | 438.875 | VK2RPL | Mt Nardi | Lismore | ? | 25 | 65 | 3.0 | NSU | |
| | 439.075 | VK2RAG | Somersby | Gosford | O | | | | NCC | |
| VICTORIA | 144.800 | VK3RPK | Red Hill | Melbourne | L | 25 | 240 | | VWI | |
| | 144.900 | VK3RPP | Lysterfield | Melbourne | O | 25 | 100 | | VWI | |
| | 147.525 | VK3RBB | Mt Tassie | Gippsland | T | 20 | 730 | | VWI | |
| | 147.575 | VK3RCU | Mt Moliagul | Bendigo | O | | | | VWI | |
| | 147.575 | VK3RGU | Carrajung | East Gippsland | T | | | | VWE | |
| | 147.575 | VK3RGV | Mt Wombat | Shepparton | O | 25 | 600 | | VWI | |
| | 147.575 | VK3RMU | Mt St Leonard | Melbourne | O | 25 | 1028 | | VWI | |
| | 147 575 | VK3RNU | Mt Stanley | Wodonga | O | 25 | 1051 | | VWI | |
| | 147.575 | VK3RPA | St Albans | Melbourne | O | 10 | 83 | | VWI | |
| | 147 575 | VK3RPC | Mt Warrenheip | Ballarat | O | 20 | 741 | | VWI | |
| | 147 575 | VK3RPG | Mt William | Grampians | O | | 1170 | | VWI | |
| | 147 575 | VK3RPM | Specimen Hill | Bendigo | O | 25 | 240 | | VWI | |
| | 147 575 | VK3RPN | Mt McKay | NE Vic | O | | 1640 | | VWI | |
| | 147 575 | VK3RPS | Mt Holden | Melbourne | O | 25 | 320 | | VWI | |
| | 147 575 | VK3RRU | Merbein | Mildura | T | 25 | | | VWI | |
| | 147 600 | VK3RPA | St Albans | Melbourne | O | 45 | 83 | | VWI | |
| | 147 600 | VK3RPC | Mt Warrenheip | Ballarat | O | 20 | 741 | | VWI | |
| | 147 600 | VK3RPS | Mt Holden | Melbourne | O | 25 | 320 | | VWI | |
| | 430.075 | VK3RPP | Lysterfield | Melbourne | L | 25 | 100 | | VWI | |
| | 439.050 | VK3RPA | St Albans | Melbourne | L | | 83 | | VWI | |
| | 439.050 | VK3RPS | Mt Holden | Melbourne | L | 25 | 320 | | VWI | |

| STATE | FREQUENCY | CALL SIGN | SITE | SERVICE AREA | STATUS | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| QUEENSLAND | 144.850 | VK4RZB | Constitution H | Brisbane | O | 20 | 230 | | QDG | |
| | 144.900 | VK4RAR | Mt Archer | Rockhampton | O | | 600 | | QWC | |
| | 144.900 | VK4RBD | Blackdown Tbld | Blackwater | O | | | | QCH | |
| | 144.900 | VK4RBS | Mt Goonaneman | Bundaberg | O | | 650 | | QBU | |
| | 144.900 | VK4RGA | Amy's Peak | Gladstone | O | 25 | 1010 | | QGL | |
| | 144.900 | VK4RIK | Mt Haran | Cairns | O | 10 | 480 | | QTR | |
| | 144.900 | VK4RZC | Wilkes Knob | Sunshine Coast | O | 20 | 470 | | QDG | |
| | 144.900 | VK4RZE | Mt Mowbullan | Darling Downs | O | 25 | | | QDG | |
| | 145.050 | VK4RBT | Mt Cotton | Brisbane | O | 60 | 233 | | QAR | |
| | 147.600 | VK4RSA | Maleny | Maleny | ? | | | | | |
| | 147.600 | VK4RZA | Springbrook | Gold Coast | O | 20 | 940 | | QDG | |
| | 147.600 | VK4RZB | Constitution H | Brisbane | O | 20 | 230 | | QDG | |
| | 147.600 | VK4RZC | Wilkes Knob | Sunshine Coast | O | 20 | 470 | | QDG | |
| | 147.600 | VK4RZD | Mt Perseverance | Toowoomba | O | 20 | 700 | | QDG | |
| | 147.600 | VK4RZE | Mt Mowbullan | Darling Downs | O | 25 | | | QDG | |
| SOUTH AUSTRALIA | 144.900 | VK5RSV | O'Halloran Hill | Adelaide | O | | | | SWI | |
| | 147.575 | VK5LZ | Iizabeth | Adelaide | O | | | | SEL | |
| | 147.575 | VK5RBP | Roseworthy | Barossa Valley | O | | | | SWI | |
| | 147.575 | VK5RMN | The Bluff | Port Pirie | O | | 730 | | SWI | 9 |
| | 147.575 | VK5RPM | Mt Graham | Millicent | O | 100 | 225 | | SER | |
| | 147.575 | VK5ZLW | Crafers | Adelaide | O | | | | | 10 |
| | 147.600 | VK5RPG | Collinswood | Adelaide | O | | | | | |
| WESTERN AUSTRALIA | 144.850 | VK6BBS | Roleystone | Perth | O | | 360 | | WTT | |
| | 144.850 | VK6R?? | Busselton | | P | | | | WDC/WRG | |
| | 144.850 | VK6RAA | Mt Barker | Albany | O | | 430 | | WSG | |
| | 144.850 | VK6RAP | Roleystone | Perth | O | | 360 | | WDC/WRG | |
| | 144.850 | VK6RAW | Fairfield | Katanning | O | | | | WKA | |
| | 144.850 | VK6RDT | Tic Hill | Perth | P | | 230 | | WDC/WRG | |
| | 144.850 | VK6RMS | Saddleback | Boddington | O | | 630 | | WDC/WRG | |
| TASMANIA | 147.575 | VK7RED | Snow Hill | East Coast | ? | | 970 | | TEC | |
| | 147.575 | VK7RIT | Mt Nelson | Hobart | O | | | | TWI | |
| | 147.575 | VK7RTY | Mt Barrow | Northern Tasmania | O | | 1400 | | TWI | |
| NORTHERN TERRITORY | 147.600 | VK8BBS | Alice Springs | Alice Springs | O | | | | SAL | |

# Index of Repeater and Beacon Licensees

| STATE | REF | LICENSEE |
|---|---|---|
| VK1 ACT | | |
| | AWI | WIA ACT Division |
| VK2 NEW SOUTH WALES | | |
| | NAD | Armidale DARC |
| | NAG | Newcastle ATV Group |
| | NAL | Albert ARC |
| | NAN | ANARTS |
| | NAU | Newcastle ATV/UHF Club |
| | NBM | Blue Mountains ARC |
| | NCA | Chifley ARC |
| | NCC | Central Coast ARC |
| | NCH | Coffs Harbour DARC |
| | NCW | Central West ARC |
| | NFS | Far Sth Coast ARC |
| | NGA | Gladesville ARC |
| | NGL | Great Lakes RC |
| | NGN | Goulburn ARC |
| | NGR | Griffith ARC |
| | NGU | Gunnedah ARC |
| | NHB | Hunter Branch RG |
| | NHO | Hornsby DARC |
| | NIL | Illawarra ARS |
| | NJB | Jervis Bay Rpt Grp |
| | NLH | Lower Hunter ARC |
| | NLI | Liverpool ARC |
| | NMS | Mid Sth Coast ARC |
| | NMW | Manly-Warringah DRC |
| | NNW | Northwest ARG |
| | NOA | Orange ARC |
| | NOR | Orana Region ARC |
| | NOT | OTC ARG |
| | NOX | Oxley Region ARC |
| | NSA | Sydney ATV Group |
| | NSG | St George ARS |
| | NSH | Shoalhaven ARC |
| | NSO | Sth Highlands ARC |
| | NSU | Summerland ARC |
| | NTC | Twin Cities REC |
| | NTM | Tamworth ARC |
| | NTR | Taree ARC |
| | NTU | Tumut DARC |
| | NWE | Westlakes ARC |
| | NWG | Wagga ARC |
| | NWH | WIA Hunter Branch |
| | NWI | WIA NSW Div |
| | NWR | Walcha Radio Grp |
| | NWW | VK2 WICEN |
| VK3 VICTORIA | | |
| | VBA | Ballarat AR Group |
| | VCG | Camberwell Grammar School |
| | VEC | EMDRC |
| | VGG | Gippsland Gate RC |
| | VNE | North East ARG |
| | VSA | Vic Scout Assoc |
| | VSG | Six Metre E Group |
| | VSH | Swan Hill DARC |
| | VSU | SE UHF Repeater Grp |
| | VTF | 10m FM Group |
| | VWE | WIA Eastern Zone |
| | VWI | WIA Vic Div |
| | VWM | WIA Midland Zone |
| | VWW | VK3 WICEN |
| | VWX | WIA NW Zone |
| | VWY | WIA NE Zone |
| | VWZ | WIA Western Zone |
| VK4 QUEENSLAND | | |
| | QAR | QARDATA |
| | QBA | Brisbane ARC |
| | QBU | Bundaberg ARC |
| | QBV | Brisbane VHF Group |
| | QBW | Bowen RAG |
| | QCA | Cairns ARC |
| | QCC | Chinchilla RC |
| | QCH | Central Highlands ARC |
| | QDA | Dalby DARC |
| | QDD | Darling Downs RC |
| | QDG | Qld Digital Group |
| | QGC | Gold Coast ARS |
| | QGL | Gladstone ARC |
| | QGY | Gympie ARC |
| | QIP | Ipswich RC |
| | QMI | Mt Isa DARG |
| | QMK | Mackay ARC |
| | QRC | Redcliffe RC |
| | QRO | Rome DARS |
| | QRX | Radio Exp. Group |
| | QSA | SEQ ATV Group |
| | QSC | Sunshine Coast ARC |
| | QTO | Townsville ARC |
| | QTR | Old Tropical VHF Ass. |
| | QWC | WIA Cent Qld Branch |
| | QWI | WIA Qld Div |
| | QWW | VK4 WICEN |
| VK5 SOUTH AUSTRALIA | | |
| | SBA | Barossa ARC |
| | SCN | Cent North ATV Grp |
| | SEL | Elizabeth ARC |
| | SER | SE Radio Group |
| | SSC | South Coast ARC |
| | SST | Southern ATV Group |
| | STV | SA ATV Group |
| | SWI | WIA SA Div |
| VK6 WESTERN AUSTRALIA | | |
| | WDC | WAADCA |
| | WEB | Esperance ARS |
| | WGE | Geraldton ARC |
| | WGO | Goldfields ARC |
| | WKA | Katanning ARC |
| | WNW | Northwest ARS |
| | WPT | Perth TV Group |
| | WRG | WA Repeater Group |
| | WSA | WA Signals ARG |
| | WSG | Southern Elec Grp |
| | WSR | Southern River Grp |
| | WSW | Southwest ARG |
| | WTT | Think Tank |
| | WVH | WA VHF Group |
| | WWA | Western ARS |
| | WWI | WIA WA Div |
| | WWK | Wickham ARC |
| | WWW | VK6 WICEN |
| VK7 TASMANIA | | |
| | TEC | East Coast ARC |
| | TMC | Aust Maritime Coll. |
| | TNA | NW ATV Group |
| | TWI | WIA Tas Div |
| | TWN | WIA Northern Branch |
| | TWS | WIA Southern Branch |
| | TWU | WIA NW Branch |
| | TWW | VK7 WICEN |
| VK8 NORTHERN TERRITORY | SAL | Alice Springs ARC |
| | SDA | Darwin ARC |
| | SGR | Gove Repeater Grp |

# ATV Repeaters

The columns at the right show ERP in watts, height above sea level in metres, timeout time in minutes, and operating status. Licensees or sponsors are identified by a letter code in the LICENSEE column - see the Licensee list. Please send any additions or corrections to the Chairman, FTAC, PO Box 300, Caulfield South, VIC 3162

Key to STATUS codes.
W = licence application pending
O = operating
L = licensed but not on air
T = testing
P = planning/development stage

| OUTPUT FREQUENCY | INPUT FREQUENCY | CALL SIGN | SITE | SERVICE AREA | STATUS | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | VK2RWI | Parramatta | Sydney | P | | | | NWI | |
| 426.250 | 444.250 | VK2RTW | Wilans Hill | Wagga | O | 10 | 300 | 30 | NWG | |
| 579.250 | 426.250 | VK2RPM | Middle Brother | Port Macquarie | L | | | | NOX | |
| 579.250 | 444.250 | VK2RTG | Kanong | Gosford | O | 90 | 220 | | NCC | |
| 579.250 | 426.250 | VK2RTN | Sugarloaf Rs | Newcastle | O | | | | NLH | |
| 579.250 | 426.250 | VK2RTS | Springwood | Springwood | O | 300 | 370 | 3.0 | NSA | |
| 579.250 | 444.250 | VK2RTV | Lane Cove | Sydney | O | 100 | 60 | | NGA | |
| | 1250.000 | VK2RAG | Somersby | Gosford | O | | | | NCC | |
| 579.250 | 426.250 | VK3REX | Swan Hill | ? | | | | | | |
| 579.250 | 426.250 | VK3RMZ | Mt Alexander | Bendigo | O | | | | VWM | |
| 579.250 | 444.250 | VK3RNE | Mt Big Ben | Wodonga | O | | | | VWY | |
| 579.250 | 444.250 | VK3RTV | Mt Dandenong | Melbourne | O | | 600 | | VWI | |
| 579.250 | 426.250 | VK4RTV | Spring Hill | Brisbane | O | 100 | 140 | | QSA | |
| 444.250 | 426.250 | VK5RCN | Barunga Range | Central North | O | 10 | 400 | 30 | SCN | 6 |
| 579.250 | 426.250 | VK5RTV | O'Halloran Hill | Adelaide | O | 200 | 200 | 30 | STV | 7 |
| 1248.250 | 444.250 | VK5RWH | Willunga Hill | Southern Vales | O | 40 | 200 | 30 | SSC | |
| 579.250 | 444.250 | VK6RAP | Perth | | T | | | | WRG/WPT | |
| 426.250 | 444.250 | VK7RTV | Mt Duncan | NW Tasmania | O | 5 | 500 | 30 | TNA | |
| 579.250 | 444.250 | VK7RAE | Kelcy Tiers | NE Tasmania | O | 5 | 220 | 30 | TNA | |

# RTTY Repeaters

The columns at the right show ERP in watts, height above sea level in metres, timeout time in minutes, and operating status. Licensees or sponsors are identified by a letter code in the LICENSEE column - see the Licensee list. Please send any additions or corrections to the Chairman, FTAC, PO Box 300, Caulfield South, VIC 3162

Key to STATUS codes:
A = licence application pending
O = [illegible]
L = licensed but not on air
= testing
P = planning/development stage

| OUTPUT FREQUENCY | INPUT FREQUENCY | CALL SIGN | SITE | SERVICE AREA | STATUS | ERP | HASL | TIME OUT | LICENSEE | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| 146.675 | 146.075 | VK2RTY | Blacktown | Sydney | O | 40 | 72 | 10 | NAN | |
| 146.975 | 146.375 | VK2RAN | Mt Sugarloaf | Newcastle | O | 10 | 300 | 5.0 | NHB | 19 |
| 147.275 | 147.875 | VK2RIL | Sublime Point | Wollongong | O | 25 | 398 | 4.0 | NIL | 19 |
| 439.325 | 434.325 | VK2RTY | Blacktown | Sydney | P | 40 | 72 | 10 | NAN | |
| 147.325 | 147.925 | VK3RBB | Mt Tassie | Gippsland | O | 40 | 600 | 10 | VWI | |
| 147.350 | 147.950 | VK3RTY | Olinda | Melbourne | O | | | | VWI | |
| 147.650 | 147.050 | VK4RBT | Mt Conon | Brisbane | O | 50 | 233 | | QAR | 19 |
| 147.675 | 147.075 | VK4RBT | Mt Conon | Brisbane | O | 50 | 233 | 4.5 | QAR | 19 |
| 146.675 | 146.075 | VK5RSV | O'Halloran Hill | Adelaide | O | 25 | 200 | 10 | SSC | |
| 147.050 | 147.650 | VK6RTG | Roleystone | Perth | O | 15 | 390 | 10 | WRG | |
| 146.625 | 146.025 | VK7RAD | Mt Duncan | NW Tasmania | O | 30 | 600 | 5.0 | TWU | 19 |

# Index of Repeater and Beacon Listing Reference Notes as at 21 January 1991

Ref No — Note

1 VK3RTN (53.675), VK3RAD (438.525), VK3RUG (438.175) are linked
2 VK3REG (146.650), VK3REB (146.900), VK3RGO (147.050) are to be linked.
3 VK5RMN (146.700) AND VK5REP (146.800) are to be inked.
[illegible] VK5RBV 146.825 and 438.525 are linked: access tone 123Hz
5 VK3RGM (53.975) and VK3RUG (146.775) are linked — 123Hz access.
6 Can be linked to VK5RTV on command: control link 147.3. Link video input 579.25, extra audio input 147.3.
7 Can be linked to VK5RCN on command: control link 147.3. Link video input 444.25, extra audio input 147.4. SSTV input 147 350.
8 4800 baud.
9 Directional beam, aimed south.
10 Callsign to become VK5RAD.
11 77Hz tone access.
12 There are plans to link VK6RCT, VK6RHW and VK6RWM to VK6RUF.
13 After 15 seconds of inactivity, a carrier of at least two-seconds duration is required to regain access.
14 VK2RAG (146.725) and VK2RWS (147 150) are linked.
15 VK3RHF 10-metre repeater link on 438.750 also operates as a repeater in its own right. Tone access 141.3Hz.
16 To remain on 147MHz until Channel 5A closes.
17 Temporary allocation.
18 Frequencies under review
19 RTTY — voice repeaters.
20 SSTV — voice repeater
31 CW practice beacons
32 CW practice beacons — FM mode.
33 To move from 52.485 to 50 043.
34 To move from 144.800 to 144.450 in late 1990.

# Acronyms and Abbreviations Used in Amateur Radio

Most of the following letter combinations have been used in amateur radio during the past year or two. In most cases their meanings have been given at the time. Nevertheless, we feel that a comprehensive list is long overdue. We make no claims about its completeness, and would welcome any additions that readers might like to contribute. The list includes all amateur societies affiliated with IARU.

| | |
|---|---|
| AAPRA | Australian Amateur Packet Radio Association |
| AARC | Aruba Amateur Radio Club |
| AARPC | Australian Amateur Radio Postcode (Award) |
| AART | Addressable Asynchronous Receiver Transmitter |
| AARTG | Australian Amateur Radio Teleprinter Group |
| ABARS | Antigua and Barbuda Amateur Radio Society |
| ABC | Australian Broadcasting Corporation |
| ABS | Acrylonitrile Butadiene Styrene (a tough plastic) |
| AC | Alternating Current |
| ADC | Analog to Digital Converter Aide de Camp |
| ACW | Anti-Clockwise |
| AF | Audio Frequency |
| AFC | Automatic Frequency Control |
| AFI | Audio Frequency Interference |
| AFRTS | Armed Forces Radio and Television Service |
| AFSK | Audio Frequency Shift Keying |
| AFVL | Amateur Funk Verein Liechtenstein |
| AGC | Automatic Gain Control |
| AGM | Annual General Meeting |
| AGRA | Association Gabonaise des Radio Amateurs |
| AHARS | Adelaide Hills Amateur Radio Society |
| ALARA | Australian Ladies' Amateur Radio Association |
| ALC | Automatic Level (or Load) Control |
| AM | Amplitude Modulation |
| AMSAT | Amateur Satellite (Organisation) |
| AMTOR | Amateur Microprocessor Teleprinter Over Radio |
| ANARE | Australian National Antarctic Research Establishment |
| ANARTS | Australian National Amateur Radio Teleprinter Society |
| ANERCOM | American National Emergency Response Committee |
| ANZA | Australian New Zealand African (net) |
| AOC | Air Officer Commanding |
| AOCP | Amateur Operator's Certificate of Proficiency |
| AOS | Acquisition of Satellite (or Signal) |
| APC | Automatic Phase Control |
| APG | Australian Preparatory Group |
| APT | Automatic Picture Transmission |
| ARA | Amateurs Radio Algeriens |
| ARAB | Amateur Radio Association of Bahrain |
| ARAD | Association des Radio Amateurs de Djibouti |
| ARAI | Association des Radio Amateurs Ivoiriens (Ivory Coast) |
| ARAS | Association des Radio Amateurs du Senegal |
| ARCOT | Amateur Radio of Tonga |
| ARDF | Amateur Radio Direction Finding |
| ARDXC | Australian Radio DX Club |
| AREM | Amateur Radio Experiment on Mir |
| ARGP | Argument of Perigee |
| ARI | Associazione Radioamatori Italiani |
| ARM | Association des Radio Amateurs de Monaco |
| ARRAM | Association Royale des Radio Amateurs du Maroc |
| ARRL | American Radio Relay League |
| ARRSM | Associazione Radioamatori della Repubblica di San Marino |
| ARSB | Amateur Radio Society of Barbados |
| ARSI | Amateur Radio Society of India |
| ASCII | American Standard Code for Information Interchange |
| ASEAN | Association of South East Asian Nations |
| ATN | Amateur Traffic Net |
| ATU | Antenna Tuning Unit |
| ATV | Amateur Television |
| AVC | Automatic Volume Control |
| AWA | Amalgamated Wireless Australasia |
| | |
| BARC | Belize Amateur Radio Club |
| BARG | Ballarat Amateur Radio Group |
| BARL | Bangladesh Amateur Radio League |
| BARS | Bahamas (also Botswana) Amateur Radio Society |
| BARTG | British Amateur Radio Teleprinter Group |
| BARTS | Burma Amateur Radio Transmitting Society |
| BASIC | Beginners All-purpose Symbolic Instruction Code |
| BATC | British Amateur Television Club |
| BBC | British Broadcasting Corporation |
| BBS | Bulletin Board System (or Service) |
| BCD | Binary Coded Decimal |
| BCI | Broadcast Interference |
| BDARA | (Negara) Brunei Darussalam Amateur Radio Association |
| BFO | Beat Frequency Oscillator |
| BFRA | Bulgarian Federation of Radio Amateurs |
| BGB | Burley Griffin Building (VK5 Div) |
| B-MAC | Multiplexed Analog Components (version B) (used for satellite TV) |
| BNC | Bayonet N Connector |
| BOCP | Broadcast Operator's Certificate of Proficiency |
| BPSK | Binary Phase Shift Keying |
| BRAMSAT | Brazilian Amateur Radio Satellite (Organisation) |
| BSS | Broadcast Satellite Service |
| BV RL | British Virgin Islands Radio League |
| BYLARA | British Young Ladies' Amateur Radio Association |
| | |
| CAA | Civil Aviation Authority |
| CAD | Computer Aided Design |
| CAM | Computer Aided Manufacture |
| CARF | Canadian Amateur Radio Federation |
| CARS | Cyprus Amateur Radio Society (also Cayman ditto) |
| CAST | Center for Aero-Space Technology (Ogden, Utah) |
| CAT | Computer Aided Transceiver |
| CATV | Community Antenna Television |
| CBRS | Citizens' Band Radio Service |
| CCD | Charge-Coupled Device |
| CCIR | Comité Consultatif Internationale des Radiocommunications |
| CCITT | Comité Consultatif Internationale des Telegraphie et Telephonie |
| CD | Civil Defence Compact Disc |
| CDI | Capacitor Discharge Ignition |
| CEPT | Comité Européenne des Postes et Telecommunications |
| CGA | Colour Graphic Adapter |
| CHARC | Central Highlands Amateur Radio Club |
| CISPR | Comité Internationale Speciale des Perturbations de Radio |
| CLARA | Canadian Ladies Amateur Radio Association |
| CMOS | Complementary Metal Oxide Silicon |
| COR | Carrier Operated Relay |
| CORA | Club Oceanien de Radio et d'Astronomie (Fr Polynesia) |
| COSPAS | (Russian acronym for Space Search System, Vessels in Distress) |
| CPI | Consumer Price Index |
| CP/M | Control Program/Microcomputer |
| CPU | Central Processing Unit |
| CRAG | Club de Radioaficionados de Guatemala |
| CRAS | Club de Radioaficionados de El Salvador |
| CRCC | Central Radio Club of Czechoslovakia |
| CREN | Club de Radioexperimentadores de Nicaragua |
| CRO | Cathode Ray Oscilloscope |
| CRRL | Canadian Radio Relay League |
| CRSA | Chinese Radio Sports Association |
| CRT | Cathode Ray Tube |
| CSIRO | Commonwealth Scientific & Industrial Research Organisation |
| CSK | Countersunk |
| CTCSS | Continuous Tone Code Squelch System |
| CTDXA | Connecticut DX Association |
| CW | Continuous Wave Clockwise |
| | |
| DAC | Digital to Analog Converter |
| DARC | Deutscher Amateur Radio Club (also Dominica) |
| DBS | Direct Broadcasting by Satellite |
| DC | Direct Current Direct Coupled |
| DCE | Digital Communications Experiment |
| DDRC | Darling Downs Radio Club |
| DDRR | Directional Discontinuity Ring Radiator |
| DDS | Direct Digital Synthesis |
| DF | Direction Finding |
| DIL | Dual In-Line |
| DIN | Deutsche Industrie Norm (German standard) |
| DIP | Dual In-Line Package |
| DMA | Direct Memory Access |
| DMM | Digital Multi-Meter |
| DOS | Disk Operating System |
| DoTC | Department of Transport and Communications |
| DOVE | Digital Orbiting Voice Encoder |
| DPDT | Double Pole Double Throw |
| DPM | Digital Panel Meter |
| DPST | Double Pole Single Throw |
| DRAM | Dynamic Random Access Memory |
| DSB | Double Side-Band |
| DSP | Digital Signal Processing |
| DTL | Diode-Transistor Logic |
| DTMF | Dual-Tone Multi-Frequency |
| DVM | Digital Volt-Meter |
| DX | Distance |
| DXCC | DX Century Club |
| DYLC | Deutsche Young Ladies' Club |
| | |
| EARS | Egyptian Amateur Radio Society |
| ECL | Emitter-Coupled Logic |
| EDAC | Error Detection and Correction |
| EDP | Electronic Data Processing |
| EDR | Eksperimenterende Danske Radioamatorer (Denmark) |
| EEC | European Economic Community |
| EGA | Enhanced Graphics Adapter |
| EHT | Extremely High Tension |
| EIA | Electronic Industries Association |
| EIRP | Effective (or Equivalent) Isotropic Radiated Power |
| ELF | Extremely Low Frequency (300 to 3000 Hz) |
| ELT | Emergency Locator Transmitter |
| EMC | Electro-Magnetic Compatibility |
| EMDRC | Eastern & Mountain Districts Radio Club |
| EMI | Electro-Magnetic Interference |
| EMP | Electro-Magnetic Pulse |
| ENG | Electronic News Gathering |
| EPROM | Electrically Erasable Programmable Read Only Memory |
| EQX | Equator Crossing |
| EPIRB | Emergency Position Indicating Radio Beacon |
| ERP | Effective Radiated Power |
| ESA | European Space Agency |
| ESD | Electro-Static Discharge |

# YAESU

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B1098/JD

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See A.R.A review Vol 12, Issue 5, or A.R review Aug '89 Issue

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| Cat D-3496 | FNB-11 12V 600mA/H NiCad - provides 5W output | $99 |
| Cat D-3351 | FNB-14 7.2V 1000mA/H high capacity NiCad | $99 |
| Cat D-3355 | CA-2 Desk Charging stand - use with plug pack charger | $39.95 |
| Cat D-2115 | MH-12A2B Speaker/Microphone | $59.95 |

Yeasu stock not held at all stores.
Please contact your local store for details.

B1098/J1

| | |
|---|---|
| ESR | Effective Series Resistance |
| ESSA | Environmental Science Services Administration |
| FACTS | Federation of Australian Commercial TV Stations |
| FAMPARC | Frankston And Mornington Peninsula Amateur Radio Club |
| FARA | Fiji Association of Radio Amateurs |
| FARWP | Future of Amateur Radio Working Party |
| FAX | Facsimile |
| FCC | Federal Communications Commission (USA) |
| FCM | Federal Contest Manager |
| FET | Field Effect Transistor |
| FFT | Fast Fourier Transform |
| FIWC | Federal Intruder Watch Co-ordinator |
| FM | Frequency Modulation |
| FOC | First(class) Operators' Club/Flag Officer Commanding |
| FOV | Field of View |
| FRA | Foroyskir Radio-Amatorar (Faeroe Is) |
| FRC | Federacion de Radioaficionados de Cuba |
| FRR | Federatia Romana de Radioamatorism (Rumania) |
| FSD | Full Scale Deflection |
| FSK | Frequency Shift Keying |
| FTAC | Federal Technical Advisory Committee |
| GARA | Guyana Amateur Radio Association |
| GARC | (Geelong, Gladesville, Grenada) Amateur Radio Club |
| GARS | (Ghana, Gibraltar) Amateur Radio Society |
| GCR | General Certification Rule |
| GDO | Grid (or Gate) Dip Oscillator |
| GEOS | Geological (research) Satellite |
| GGREC | Gippsland Gate Radio & Electronics Club |
| GHz | Gigahertz |
| GOC | General Officer Commanding |
| GOES | Geostationary Operational Environmental Satellite |
| HARG | Hills (WA) or Healesville (Vic) Amateur Radio Group |
| HARTS | Hongkong Amateur Radio Transmitting Society |
| HDLC | High Level Data Link Control |
| HDTV | High Definition Television |
| HF | High Frequency (3 to 30 MHz) |
| HFBC | High Frequency Broadcasting Conference |
| HMSO | Her Majesty's Stationery Office |
| HT | High Tension  Handy Talky Hand Transceiver |
| HTA | Heavier Than Air |
| IARC | Israel Amateur Radio Club |
| IARN | International Amateur Radio Network |
| IARU | International Amateur Radio Union |
| IARUMS | IARU Monitoring Service |
| IBM | International Business Machines |
| IC | Integrated Circuit |
| ID | [redacted] |
| IDC | International Data Connector |
| IEA | Institution of Engineers of Australia |
| IEC | International Electrotechnical Commission |
| IEE | Institution of Electrical Engineers |
| IEEE | Institution of Electrical & Electronic Engineers |
| IF | Intermediate Frequency |
| IHU | Integrated Housekeeping Unit |
| IOC | Index of Co-operation |
| IPHA | Information Program for Handicapped Amateurs |
| IPS | Ionospheric Prediction Service |
| IR | Infra Red |
| IRA | Islenzkir Radioamatorar (Iceland) |
| IRC | International Reply Coupon International Resistance Co |
| IREE | Institution of Radio & Electronic Engineers |
| IRTS | Irish Radio Transmitters Society |
| ISB | Independent Side-Band |
| ISD | International Subscriber Dialling |
| ISDN | Integrated Services Digital Network |
| ISO | International Standards Organisation |
| ITHE | International Travel Host Exchange |
| ITT | International Telegraph & Telephone |
| ITU | International Telecommunications Union |
| IW | Intruder Watch |
| IWP | Interim Working Party |
| JAMSAT | Japan Amateur Satellite (organisation) |
| JARA | Jamaica Amateur Radio Association |
| JARL | Japan Amateur Radio League |
| JFET | Junction Field Effect Transistor |
| JIWP | Joint Interim Working Party |
| JLRS | Japan Ladies Radio Society |
| JMFD | Joyn Moyle (Memorial National) Field Day |
| JOTA | Jamboree On The Air |
| KARL | Korean Amateur Radio League |
| KARS | Kuwait Amateur Radio Society |
| kB | Kilobyte |
| kHz | Kilohertz |
| KISS | Keep It Simple, Stupid! |
| LABRE | Liga de Amadores Brasileiros de Radio Emissao |
| LAN | Local Area Network |
| LAOCP | Limited Amateur Operator's Certificate of Proficiency |
| LARA | Ligos dos Amatores de Radio de Angola |
| LARS | Lesotho Amateur Radio Society |
| LASER | Light Amplification by Stimulated Emission of Radiation |
| LCD | Liquid Crystal Display |
| LCRA | Liga Colombiana de Radioaficionados |
| LED | Light Emitting Diode |
| LF | Low Frequency (30 to 300 kHz) |
| LFARG | Land Forces Amateur Radio Group |
| LHF | Left-Hand Side |
| LIU | Line Isolation Unit |
| LMRE | Liga Mexicana de Radio Experimentadores |
| LNA | Low-Noise Amplifier |
| LO | Local Oscillator |
| LOS | Loss of Satellite (or Signal) |
| LPRA | Liga Panamena de Radioaficionados |
| LRAA | Liberian Radio Amateurs' Association |
| LREM | Liga dos Radio Emissores de Mocambique |
| LSB | Lower Sideband |
| LSI | Large Scale Integration |
| LTA | Lighter Than Air |
| LWAW | Light Weight Air Warning |
| mA (mV) | Milliampere (millivolt) etc |
| MAC | Multiplexed Analog Components (Satellite TV System) |
| MARL | Malta Amateur Radio League |
| MARS | Mauritius (or Monserrat) Amateur Radio Society<br>Military Affiliated Radio Service |
| MARTS | Malaysian Amateur Radio Transmitters' Society |
| MASER | Microwave Amplification by Stimulated Emission of Radiation |
| MB | Megabyte |
| MCW | Modulated Continuous Wave |
| MDS | Minimum Detectable Signal Multipoint Distribution System |
| MF | Medium Frequency (300 kHz to 3 Mhz) |
| MHz | Megahertz |
| MMIC | Miniature Microwave Integrated Circuit |
| MODEM | Modulator-Demodulator |
| MODS | Modifications |
| MOS | Metal Oxide Silicon |
| MOSFET | Metal Oxide Silicon Field Effect Transistor |
| MOX | Manually Operated Changeover |
| MPRGI | Melbourne Packet Radio Group Inc |
| MRASZ | Magyar Radioamator Szovetseg (Hungary) |
| MS-DOS | Microsoft © Disk Operating System |
| MTBF | Mean Time Between Failures |
| MUF | Maximum Usable Frequency |
| NAND | Not And |
| NAOCP | Novice Amateur Operator's Certificate of Proficiency |
| NARS | Nigerian Amateur Radio Society |
| NASA | National Aeronautics & Space Administration |
| NASDA | National Space Development Agency (Japan) |
| NBFM | Narrow Band Frequency Modulation |
| NBS | National Bureau of Standards |
| NCDXF | Northern California DX Foundation |
| NCRG | Northern Corridor Radio Group (Perth) |
| NDB | Non-Directional Beacon |
| NEC | Nippon Electric Company |
| NERG | North East Radio Group (Melbourne) |
| NICAD | Nickel Cadmium (cell or battery) |
| NOAA | National Oceanic & Atmospheric Administration |
| NOC | Network Operations Centre |
| NORAD | North (American) Air Defence |
| NPO | Negative Positive Zero |
| NRRL | Norsk Radio Relae Liga (Norway) |
| NRZ | Non Return to Zero |
| NRZI | Non Return to Zero Inverted |
| NTSC | National Television Systems Committee |
| NZART | New Zealand Association of Radio Transmitters |
| NZRFS | New Zealand Radio Frequency Service |
| OM | [redacted] |
| ORARI | Organisasi Radio Amatir Republik Indonesia |
| OSCAR | Orbital Satellite Carrying Amateur Radio |
| OTC | Overseas Telecommunications Commission  Old Timers' Club |
| OTHR | Over The Horizon Radar |
| OVSV | Oesterreichischer Versuch-Sender-Verband (Austria) |
| PA | Power Amplifier Public Address |
| PABX | Private Automatic Branch Exchange |
| PACSAT | Packet (radio) Satellite |
| PAL | Phase Alternating Line (TV colour system) |
| PARA | Philippines Amateur Radio Association |
| PARS | Pakistan Amateur Radio Society |
| P(R)BBS | Packet (Radio) Bulletin Board Service (System) |
| PC | Printed Circuit  Personal Computer |
| PCA | Point of Closest Approach |
| PCB | Printed Circuit Board  Polychlorinated Biphenyl (toxic liquid insulator) |
| PEP | Peak Envelope Power |
| PET | Polyethylene Terephthalate (used for plastic bottles) |
| PIN | Positive-Intrinsic-Negative |
| PIR | Passive Infra Red |
| PLL | Phase-Locked Loop |
| PMB | Project Management & Budgeting |
| PNGARS | Papua New Guinea Amateur Radio Society |
| PSIG | Pounds (per) Square inch (Gauge) |
| PSK | Phase Shift Keying |
| PTFE | Poly Tetra-Fluoro-Ethylene (Teflon is one trade-name) |
| PTT | Push to Talk  Posts, Telegraph & Telephone |
| PVA | Poly-Vinyl Acetate (eg plastic paint) |
| PVC | Poly-Vinyl Chloride |
| PZK | Polski Zwiazek Krotkofalowcow (Poland) |
| QARDATA | Queensland Amateur Radio Digital And Teletype Association |
| QCWA | Quarter Century Wireless Association |
| QTHR | Location Correct in Call Book |
| RAAG | Radio Amateur Association of Greece |
| RAAN | Right Ascension of Ascending Node |
| RACES | Radio Amateur Civil Emergency Service |
| RADAR | Radio Detection And Ranging |
| RAL | Association des Radio Amateurs Libanais (Lebanon) |
| RAM | Random Access Memory |
| RAOTC | Radio Amateur Old Timers' Club |
| RAST | Radio Amateur Society of Thailand |

RAX Rural Autometric Exchange
RAYNET Radio Amateur Emergency
RC Radio Controlled Resistance Capacitance
RCA Radio Club Argentino Radio Corporation of America
RCB Radio Club Boliviano
RCC Radio Club de Chile Rag Chewers' Club
RCCR Radio Club de Costa Rica
RCD Radio Club Dominicano
RCH Radio Club of Haiti (also Honduras)
RCP Radio Club Paraguayo (also Peruano)
RCU Radio Club Uruguayo
RCV Radio Club Venezolano
RD Radio Detector Remembrance Day
RDSS Radio Determination Satellite Service
REO Reseau des Emetteurs Francais
[illegible] Rede dos Emissores Portuguesas
RF Radio Frequency
RFDS Royal Flying Doctor Service
[illegible] Radio Frequency Interference
RGB(I) Red-Green-Blue (Intensity?)
[illegible] Right-Hand Side
RI Radio Inspector
RISC Reduced Instruction Set Computer
RIT Receiver Incremental Tuning
RJRAS Royal Jordanian Radio Amateur Society
[illegible] Reseau Luxembourgeois (des Amateurs des Ondes Courtes)
RMS Root Mean Square
RNARS Royal Naval Amateur Radio Society
ROARS Royal Omani Amateur Radio Society
ROM Read Only Memory
RPM Revolutions Per minute
RPN [illegible]
[illegible] Royal Signals Amateur Radio Society
[illegible] Radio Society of Bermuda
RSF Radio Sports Federation (of USSR)
RSGB Radio Society of Great Britain
RSK Radio Society of Kenya
RSL Returned Servicemen's League
[illegible] Resident System Monitor Regimental Sergeant Major
RSS Radio Society of Swaziland
RSSL Radio Society of Sri Lanka
RST Readability, Strength, Tone
RSTG Radio Society of The Gambia
RSZ Radio Society of Zambia
RTTY Radio Teletype
[illegible] Regenerativeche Uberantworter vor Digital Amateuradio Kommunicationsamtsel?
RX [illegible]

[illegible] Standards Association of Australia (now Standards Australia)
SADCG Sydney Area Digital Communications Group
SAPS [illegible]
SARES Soviet Amateur Radio Emergency Service
SAREX ShuttleAmateur Radio Experiment
SARL South African Radio League
SARTS Singapore Amateur Radio Transmitting Society
SASE Self-Addressed Stamped Envelope
SATVG Sydney Amateur Television Group
SBSS Sound Broadcasting Satellite Service
SCR [illegible]
[illegible] [illegible]
SECAM Sequence a Memorie (French colour TV system)
SEG Southern Electronics Group (Albany WA)
SELCALL Selective Calling (system)
SEQATVG South-East Queensland Amateur TV Group
SES State Emergency Service
SHF Super High Frequency (3 to 30 GHz)
[illegible] Sudden Ionospheric Disturbance Sound Interference Device
SINAD Signal (ratio to) Noise and Distortion
[illegible] Seychelles (also Solomon) Islands Radio Society
SLARS Sierra Leone Amateur Radio Society
[illegible] Small Microwave Accessory?
[illegible] Surface Mounting Device
SMIRK Six-Metre International Radio Klub
SMIS Spectrum Management Information System
SNA System Network Architecture
SNAFU Situation Normal, All Fouled Up!
SPARC Southern Peninsula Amateur Radio Club
SPDT Single Pole Double Throw
SPOT [illegible]
SPST Single Pole Single Throw
[illegible] Suomen Radioamatoorillito (Finland)
SRJ Saves Radio Amatera Jugoslavije
SSA (Foreningen) Sveriges Sandareamatorer (Sweden)
SSB Single Sideband
SSR Secondary Surveillance Radar
SSTV Slow Scan Television
STC Standard Telephones & Cables
STD Subscriber Trunk Dialling
SWL Short Wave Listener
SWR Standing Wave Ratio
SYELEDIS Systeme Electronique pour Evaluation de Distance
SYSOP System Operator
TAFE Technical And Further Education
TAPR Tucson Amateur Packet Radio
TARC Townsville Amateur Radio Club
TCA Time of Closest Approach
TCPIP Transfer Control Peripheral Interchange Program
TEAC Technical Equipment Advisory Committee
TEP Trans Equatorial Propagation
TI Turn Indicator Interference
TIR Technical Institute of Radio (Syria)
TLC Tender Loving Care
TLM Telemetry
TNC Terminal Node Controller Tiny N Connector
TPC Third Party Traffic
TRAC Telsiz Radyo Amatorleri Camiyati (Turkey
TRF Tuned Radio Frequency
TTARS Trinidad & Tobago Amateur Radio Society
TTL Transistor Transistor Logic
TTY Teletype
TU Terminal Unit Thank You
TV Television
TVI Television Interference
TX Transmitter
UART Universal Asynchronous Receiver Transmitter
UBA Unie van de Belgische Amateur-Zenders (Belgium)
UHF Ultra High Frequency (300 MHz to 3 GHz)
ULA Uncommitted Logic Array
UoSAT University of Surrey Satellite
URA [illegible]
URE Union de Radioaficionados Espanoles
USB Upper Sideband
USKA Union Schweizerischen Kurzwellen-Amateure
UTC Universal Temps Co-ordiné (formerly GMT)
UV Ultra-Violet
UZRA Union Zairoise des Radio Amateurs
VARS Vanuatu Amateur Radio Society
VBT Variable Bandwidth Tuning
VCO Voltage Controlled Oscillator
VCR Video Cassette Recorder
VDE Verein Deutsche Elektrotechniker (German standard society)
VDU Visual Display Unit
VERON Vereeniging voor Experimenteel Radio Onderzoek in Nederland
VFO Variable Frequency Oscillator
VGA Video Graphics [illegible]
VHF Very High Frequency (30 to 300 MHz)
VHS Video Home System
VIC [illegible]
VLF Very Low Frequency (3 to 30 kHz)
VLSI Very Large Scale Integration
VOA Voice Of America
VOX Voice Operated Changeover
VRAS Vereeniging van Radio Amateurs in Suriname
VSB Vestigial Sideband
VSWR Voltage Standing Wave Ratio
VTAC Victorian Technical Advisory Committee
VTVM Vacuum Tube Volt Meter
VU Volume Unit
VXO Variable Crystal Oscillator
WAADCA Western Australian Amateur Digital Communication Association
WANSARC Western And Northern Suburbs Amateur Radio Club
WARC [illegible]
[illegible]
WARG Wagga Amateur Radio Group
WARO Women's Amateur Radio Organisation (NZ)
WAS [illegible]
WAVKCA [illegible]
WAZ [illegible]
WEFAX [illegible]
WIA [illegible]
WIAGSA WIA Grid Square Award
WICEN Wireless Institute Civil Emergency Network
WOD [illegible]
WPM Words Per Minute
WPX World Prefix (Contest)
WSARC Western Samoa Amateur Radio Club
WWSA World-Wide South America (Contest)
XIT Transmitter Incremental Tuning
XMTR Transmitter
XYL Ex Young Lady (ie wife)
YL Young Lady
YLRL Young Ladies' Radio League
ZARS Zimbabwe Amateur Radio Society
ZIF Zero Insertion Force (applies to connectors)

**Have you advised the DoTC of your new address?**

# AWARDS

PHILL HARDSTAFF VK3JFE – FEDERAL AWARDS MANAGER
PO BOX 300 SOUTHCAULFIELD VIC 3162

It's been a year now since we had a general listing of all the awards available from the WIA. As this is the Annual Data Issue I have decided to list all of the WIA awards currently available. Because of the number of letters I have had requesting no QSLs, and as a number of other reputable organisations have taken this path (eg NZART), I would like to make it so that you do not need QSL cards for any WIA award except DXCC. In case you think this is some super radical change to the rules — it is not. If you read the full rules for all awards as printed in the 1986 Callbook, you will find that QSL cards were never required for VK applicants for WAVKCA. All I am trying to do here is standardise the rules, and bring them in line with what people want. Personally, I can't see the need for stipulating that QSL cards be required, as if you want to cheat on an award application, well, that's your problem, and you will always know that the piece of paper hanging on the wall is a permanent reminder of that fact (that you are a cheat), and you will never really be as proud of it as someone who earned theirs properly — will you? Also, with the price of postage these days, QSLing can be very expensive, and not everyone likes to QSL anyway. I don't think we can really have no QSLs for DXCC. Please don't get this confused with not having to send QSL cards to me for DXCC. You need to have QSL cards for DXCC, but do not need to send them to the awards manager, a certified list is OK. In the meantime, QSLs will still be required until I consult with the Federal Executive on how to go about dropping this from the rules.

## WIA Awards Program General Rules

Cost: Free to all WIA members, VK non-members pay $A5 and others $US5 or eight IRCs.

Verifications: Applicants need to hold QSL cards for QSOs claimed. However, do not send QSL cards with your application. A list of all contacts is needed which should list the following information: Date, time, callsign of station contacted, frequency, mode. Contacts should be listed in order of callsigns. At the bottom of this list should be a declaration signed by an official of a recognised society or by two licensed amateurs reading as follows, "I/we certify that (insert name and callsign of applicant) holds QSL cards corresponding to the above list and that I/we have personally inspected these cards." Signatories to the declaration should clearly indicate their names and callsigns.

Six Metres: Contacts on 50MHz during the period that we were not allowed to operate below 52MHz will not be allowed. This goes for DX stations claiming contacts with illegal VK stations as well. I feel very strongly about this, otherwise it will undermine the whole honesty system.

## Applications

- Applicants should state whether they are WIA members and, if so, list their membership number. Where relevant, changes in callsigns and dates of such changes should be indicated.
- All contacts for any particular award should be made from the same call area.
- Crossband contacts are not eligible nor are those made through terrestrial repeaters, from aircraft or to or from seagoing vessels.
- Where a fee is payable this should be sent with the application.
- In case of dispute, the decision of the Federal Awards Manager and two officers of the Federal Executive on the interpretation of these rules shall be final and binding.

## Awards Available

## WIA DXCC Award

This award is available to all amateurs who submit evidence of having worked 100 countries, and can be endorsed for various bands and modes. Acceptable countries are those that are acceptable for ARRL DXCC (I will print an up-to-date country list soon), with the WIA reserving the right to make different decisions in regard to additions and deletions.

Having obtained the DXCC award, holders may register subsequent claims for higher totals, and these will be published from time to time in *Amateur Radio* magazine in the form of a ladder. No stickers to indicate these higher levels on certificates are available (I'm working on this one). Applications for higher totals should be made in multiples of 25 up to a total of 200 (ie 125, 150, 175, 200) and thereafter in multiples of 10 up to a total of 300. After 300 applications will be processed in one-country steps or as required.

Should a country be deleted from the DXCC list, credit for that country will be allowed if worked before the date of deletion. The DXCC ladder will show the members' tally of current countries and total of current plus deleted countries, eg 200/220 — meaning 200 current countries and an extra 20 that have been deleted at some time, but were worked before the date of deletion.

All claimed QSOs must be made from the same DXCC country.

General rules apply.

## Worked All VK Call Areas

Known as WAVKCA, this colourful (now A4 sized) certificate is the WIA's most popular award. There are *separate* requirements for local and overseas amateurs.

VK applicants require 77 QSOs as follows:

- VK0 — three contacts from at least two different areas
- VK1 — three contacts on at least two different bands
- VK2,3,4,5,6 and 7 — 10 contacts from each call area on at least three different bands
- VK8 — three contacts on at least two different bands
- VK9 — four contacts from at least three different areas.

General rules apply except Australian applicants need not hold QSL cards.

No repeat contacts made after 14 February 1990 will count.

DX applicants (non-VK) require 22 QSOs as follows:

- VK0, 1 — one contact from each call area
- VK2,3,4,5,6 and 7 — three contacts from each call area
- VK8,9 — one contact from each call area.

Contacts must be after 1 January 1946.

General rules apply.

## Heard All VK Call Areas

This is a "heard only" version of WAVKCA award, available to SWLs on the same basis as to amateurs; the same fees and procedures apply.

General rules apply.

## Worked All VK Call Areas (VHF) Award

Requires 22 QSOs on VHF bands (50MHz and above) as follows:

- VK0, 1 — one contact each
- VK2, 3, 4, 5, 6 and 7 — three contacts from each
- VK8, 9 — one contact each

Contacts must have been made after 1 January 1958.

If the applicant moves to a new location and the new location exceeds a distance of 240km from the old, a new application will be necessary for the new QTH.

General rules apply.

## Worked All States (VHF) Award

Requires eight QSOs on VHF bands (50MHz and above) as follows.

One contact each with each state and territory of Australia as listed below:

- VK1 — Australian Capital Territory
- VK2 — New South Wales
- VK3 — Victoria

— VK4 — Queensland
— VK5 — South Australia
— VK6 — Western Australia
— VK7 — Tasmania
— VK8 — Northern Territory

General rules apply.

## Australian VHF Century Club Award

Requires 100 QSOs on VHF bands (50MHz and above) as follows:

— 100 contacts with 100 different stations at least 70 of which must be Australian.
— Separate awards will be issued for each different VHF/UHF band.
— Contacts must be on or after 1 June 1948.

If the applicant moves to a new location and the new location exceeds a distance of 240km from the old, a new application will be necessary for the new QTH.

General rules apply.

## WIA Antarctic Award

Applicants need to make 10 confirmed contacts with amateur stations conducting valid operations from Antarctica. The 10 must include stations licensed by at least six different government authorities, and at least one must be a VK0.

Antarctica is defined as the land mass, including islands and permanent ice shelf below 60 degrees south latitude. (This excludes Heard and Macquarie Islands. These are sub-Antarctic).

Only contacts on or after 23 February 1988 are valid for this award.

General rules apply.

**Note:** I am still trying to piece together just how far Ken got with this one. From what I can tell, no certificates have been produced but one may have been designed. If anyone out there has any information on this award please let me know. To date there have been only three applications.

## Worked All Continents

This award is sponsored by the International Amateur Radio Union, International Secretariat (at ARRL HQ) and is available only to amateurs who are members of their IARU-affiliated national society which, in Australia, is the WIA. So, to put it bluntly, if you are *not a WIA member* then you cannot apply for this award (for a VK callsign). There cannot and will not be any exceptions to this. If you do care to send an application direct, it will be returned and you will be told to apply to the WIA.

The basic award is free and is available for one contact with each of the six continents, ie North America, South America, Oceania, Asia, Europe and Africa. You can apply for any of the following certificates:

— Basic certificates (mixed modes)
— CW
— Phone
— SSTV
— RTTY
— FAX
— Satellite
— 5-Band

as well, the following endorsement stickers are available:

— 6-Band
— QRP (5 watts out or less)
— 1.8MHz
— 3.5MHz
— 50MHz
— 144MHz
— 430MHz

I do need to see QSL cards (not photocopies) so please include a self-addressed envelope the same size as that in which you send the cards to me, and also with the same amount of postage on it, and I will turn your cards around quickly. No other fees or IRCs are necessary, but if you could include an address label out of an *AR* magazine to prove membership this would be helpful.

## Worked All States

You may have noticed that I referred to the Worked All States Award before as WAS VHF. This is because I intend to introduce a HF version of this award, as I think it would be popular and fairly simple to qualify for. Some of these simple awards can be quite rewarding, especially when they represent working all the states or similar of a country. One award I have which I quite like is the ZL Worked All Districts award, which is available on all bands, not just VHF. Even though it is only for working the four districts, it is a nice one to get. The HF version will be a different design as we have a large number of the VHF awards, and at the current rate these will last a long time.

## News of some other awards

**Royal Omani Amateur Radio Society**

I received a letter from Salim Al-Kitani (A41JV) giving details of an award for working a maritime mobile station using the call-sign of A43SR/M operating on all bands from 3.5MHz to 28MHz on board the Omani yacht "FULK AL-SALAMAH". The yacht will be mobile from 13/10/1990 to 31/3/91, so you will still have a month or so to catch up with it. You need to work the above station on either two different bands or two different modes to qualify for the award. All QSL and award claims to ROARS, Box 981, Muscat, Sultanate of Oman. You should send a certified log extract and 10 IRCs or equivalent.

## Maple Leaf Award

I received rules to the above award from its custodian Gary Hammond VE3GCO:

1. Work and confirm different prefixes (NOT JUST STATIONS) from Canada. There are six classes to the award.
— Class IV requires 10 Canadian prefixes
— Class III requires 15 Canadian prefixes
— Class II requires 25 Canadian prefixes
— Class I requires 30 Canadian prefixes
— Maple Leaf Award 50 Plaque requires 50 different prefixes
— Maple Leaf Award 100 Walnut Plaque requires 100 different prefixes
2. The cost of the attractive red and white flag certificate is $3 or seven IRCs. All contacts must be after 15 February 1965, the date which Canada received its official flag. Send log data only, or complete the lower prefix table with the call suffix. The MLA 50 plaque is a wood-grain plaque with a metallic copper crest, cast maple leaves and beautifully engraved plaque. The MLA 100 plaque walnut plaque is a larger one of similar design. The MLA 50 costs $US40 for DX applicants and the MLA 100 costs $US50 for DX applicants, which includes air-mail costs.
3. The sponsor is the Maple Leaf Radio Society VE3GCO, C/o Gary V Hammond, 5 McLaren Avenue, Listowel, Ontario, Canada, N4W 3K1.

## Prefix Table

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CF1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CF |
| CG1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CG |
| CH1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CH |
| CI1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CI |
| CJ1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CJ |
| CK1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CK |
| CY1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CY |
| CZ1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | CZ |
| VA1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VA |
| VB1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VB |
| VC1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VC |
| VD1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VD |
| VE1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VE |
| VF1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VF |
| VG1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VG |
| VO1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VO |
| VX1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VX |
| VY1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | VY |
| XJ1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | XJ |
| XK1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | XK |
| XL1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | XL |
| XM1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | XM |
| XN1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | XN |
| XN2 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | XN |
| XO1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | XO |
| Special prefixes Centennial prefixes from 1967 | | | | | | | | | | |
| 3B1 | 2 | 3B | | | | | | | | |
| 3C1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 0 | 3C | |

4. From 15 February to 15 April 1990 VE3KN operated the special 25th anniversary call CF25A. If other double or triple numbers/numeral calls are allowed in the future each will count separately as per the rules of CQ WPX award. Good luck.

## Grid Square Award

At this stage I just wish to say that I have not forgotten about the Grid Square Award, and that I am just putting the finishing touches to the rules, so this is your last chance to have a say. The draft rules appeared in the October 1990 issue of *AR*. I wish to acknowledge letters from VK3BRZ, VK3KKW, VK3ZJC, VK2EMU, ZL3TX/VK4AEZ and a phone call from VK3EBP. Thank you for your comments and suggestions, most of which will be incorporated in the new draft rules which will *definitely* be in next month's issue. As I am on holidays for a couple of weeks, I am trying to get on top of things, but I have already spent five days trying to catch up on awards etc, but still have a long way to go. I seem to be getting a lot more mail lately. This seems to be related to sending a current list of available awards with every award I send out.

That's about it for this month — happy hunting.

73 de Phill VK3JFE/FK1TS

# CONTESTS

NEIL PENFOLD VK6NE
CONTESTS CO-ORDINATOR

## Commonwealth Contest 1991 Rules

An appeal is made to the many very competent CW operators licensed in recent years to help bolster VK participation in the Commonwealth Contest this year.

In 1990, 30 logs were submitted, but 50-60 (as evidenced by the logs) had contest exchanges, some of the "non-entrants" having quite large contact totals which would have translated to substantial scores.

The contest is a unique combination of a domestic and a DX contest and it would be theoretically possible to score 3000 points (but hardly likely!) from VK contacts only.

## Rules

(Reprinted from RadCom)

1. General: The Commonwealth Contest is intended to promote contacts between stations in the British Commonwealth and Mandated Territories.

2. Eligible entrants: British Isles — Class A licence holders, who must be members of RSGB. Overseas — Licensed radio amateurs within the British Commonwealth or British Mandated Territories. Single-operator entries only will be accepted, and entrants may not receive any assistance whatsoever during the contest, including the use of spotting nets or other assistance in finding new bonuses. Entries will not be accepted from headquarters stations, nor from stations using GB or other special-event callsigns or operating maritime or aeronautical mobile.

3. When. 1200GMT Saturday, 9 March 1991 to 1200GMT Sunday, 10 March 1991.

4. Sections. (a) multi-band
(b) single-band

Single-band entrants should claim points for contacts made on one band only, but are requested to submit details of QSOs made on other bands, for adjudication purposes. Multi-band entries will not be eligible for single-band awards.

5 Frequencies/mode: CW only in the 3.5, 7, 14, 21 & 28MHz bands. Entrants should operate in the lower 30kHz of each band, except when contacting novice stations operating above 21030 and 28030kHz. Crossband contacts will not count for points or bonuses.

6. Contest Exchange: RST and serial number, commencing with 001.

7 Scoring: Contacts may be made for points with any station using a British Commonwealth prefix (see accompanying list) except those within the entrant's own call area. Note that for this contest the entire UK counts as ONE call area, and therefore UK stations may not work each other for points. Each completed contact scores five points, with a bonus of 20 points for each of the first three contacts with each Commonwealth Call Area, on each band.

8. 'Headquarters' Stations: A number of Commonwealth Society HQ stations (although not eligible as entrants) are expected to be active during the contest and will send 'HQ' after their serial number to identify themselves. Every HQ station counts as an additional call area (and therefore attracts the 20-point bonus) and entrants may contact their own HQ station for points and bonuses.

9. Logs: Separate logs are required for each band. Entries should be typed or written in ink on one side only of standard (A4) size paper or pre-printed log sheets, and should contain 40 QSOs per page. Columns to be headed: Time GMT; callsign of station worked; RST and serial number sent; RST and serial number received; bonus points; points claimed. Computer-generated logs are welcomed provided they are formatted as above.

Duplicate contacts must be clearly marked and not claimed for points. Each unmarked duplicate contact found for which points have been claimed will result in the deduction of 55 points. Entries containing more than five such duplicates will be liable to disqualification.

Each entry must be accompanied by a cover sheet indicating the section entered and the scores claimed on each band (also, don't forget details of equipment, and your correspondence address!). Entrants making more than 80 QSOs are requested to include a check-list of the callsigns appearing in the log, sorted into alphabetical order and with either the serial number sent or the time of contact beside the callsign.

10. Declaration: Each entry must be accompanied by the following declaration, signed and dated: "I declare that this station was operated strictly in accordance with the rules and spirit of the contest, and I agree that the decision of the Council of the RSGB will be final in all cases of dispute."

11. Address for logs: RSGB HF Contests Committee, PO Box 73, Lichfield, Staffs, WS13 6UJ, England.

12. Closing date for logs: Logs should be posted to ARRIVE before 8 April 1991. Overseas entrants are advised to forward their logs by air mail, as late entries may be treated as checklogs.

13. Awards:

(a) Multi-band — The Senior Rose Bowl will be awarded to the overall leader, and the runner-up will be awarded the Junior Rose Bowl. The Col Thomas Rose Bowl will be awarded to the highest-placed UK station. Certificates of Merit will be awarded to the third-placed entrant overall, and to the leading station in each call area.

(b) Single-band — Certificates of Merit will be awarded to the leading overseas and UK entrants on each band.

## Receiving Contest

A Receiving Contest is run in conjunction with the above.

For rules, SASE to VK3ZC QTHR.

## Commonwealth Contest 1991 Call Areas

The following call areas are recognised for the purpose of scoring in the Commonwealth Contest 1991:

| | |
|---|---|
| A2 | Botswana |
| A3 | Kingdom of Tonga |
| AP | Pakistan |
| C2 | Nauru |
| C5 | Gambia |
| C6 | Bahamas |
| G,GB,GD,GI, GJ,GM,GU,GW | United Kingdom (all one area) |
| H4 | Solomon Is |
| J3 | Grenada |
| J6 | St Lucia |
| J7 | Dominica |
| J8 | St Vincent |
| P2 | Papua New Guinea |
| S7 | Seychelles |
| T2 | Tuvalu |
| T20 | W Kiribati |

| | |
|---|---|
| T31 | C Kiribati |
| T32 | E Kiribati |
| V2 | Antigua, Barbuda |
| V3 | Belize |
| V8 | Brunei |
| VE1 | Maritime Provinces |
| VE1 | Sable Is |
| VE1 | St Paul Is |
| VE2 | Quebec |
| VE3 | Ontario |
| VE4 | Manitoba |
| VE5 | Saskatchewan |
| VE6 | Alberta |
| VE7 | British Columbia |
| VE8 | North West Territories |
| VK1 | Australian Capital Territory |
| VK2 | New South Wales |
| VK3 | Victoria |
| VK4 | Queensland |
| VK5 | South Australia |
| VK6 | Western Australia |
| VK7 | Tasmania |
| VK8 | Northern Territory |
| VK9L | Lord Howe Is |
| VK9M | Mellish Reef |
| VK9N | Norfolk Is |
| VK9X | Christmas Is |
| VK9Y | Cocos (Keeling) Is |
| VK9Z | Willis Is |
| VK0 | Heard Is |
| VK0 | Macquarie Is |
| VK0 | Antarctica |
| VO1 | Newfoundland |
| VO2 | Labrador |
| VP23E | Anguilla |
| VP2K | St Kitts, Nevis |
| VP2M | Montserrat |
| VP2V | British Virgin Is |
| VP5 | Turks & Caicos |
| VP8 | Falkland Is |
| VP8 | S Georgia |
| VP8 | S Sandwich Is |
| VP8 | S Shelland Is |
| VP8 | Antarctica |
| VP9 | Bermuda |
| VQ9 | Chagos |
| VR6 | Pitcairn Is |
| VS6 | Hong Kong |
| VY1 | Yukon |
| VU | India |
| VU7 | Laccadives |
| VU7 | Andaman & Nicobar Is |
| YJ | Vanuatu |
| Z2 | Zimbabwe |
| ZB2 | Gibraltar |
| ZC4 | Cyprus (Sovereign Bases) |
| ZD7 | St Helena |
| ZD8 | Ascension Is |
| ZD9 | Tristan da Cunha, Gough Is |
| ZF | Cayman Is |
| ZK1 | Cook Is |
| ZK1 | Manihiki |
| ZK2 | Niue |
| ZK3 | Tokelau |
| ZL0 | New Zealand |
| ZL1 | New Zealand |
| ZL2 | New Zealand |
| ZL3 | New Zealand |
| ZL4 | New Zealand |
| ZL5 | Antarctica |
| ZL7 | Chatham Is |
| ZL8 | Kermadec Is |
| ZL9 | Auckland & Campbell Is |
| 3B8 | Mauritius |
| 3B9 | Rodrigues Is |
| 3D2 | Fiji |
| 3DA | Swaziland |
| 4S | Sri Lanka |
| 5B4 | Cyprus |
| 5H | Tanzania |
| 5N | Nigeria |
| 5W | Western Samoa |
| 5X | Uganda |
| 5Z | Kenya |
| 6Y | Jamaica |
| 7P | Lesotho |
| 7Q | Malawi |
| 8P | Barbados |
| 8Q | Maldives |
| 8R | Guyana |
| 9G | Ghana |
| 9H | Malta |
| 9J | Zambia |
| 9L | Sierra Leone |
| 9M2 | W Malaysia |
| 9M6/9MB | E Malaysia |
| 9V | Singapore |
| 9Y | Trinidad & Tobago |
| GB5CC | RSGB HQ Station + various |

other Commonwealth HQ stations

## Commonwealth Contest 1990 Results

Not all VKs would have considered the conditions for the 1990 Commonwealth Contest as ideal, but they were a great improvement on the previous year when QRN on the lower bands really made things difficult.

Though the number of local logs submitted dropped from 36 to 30, there was a quite reasonable number of VKs available for contact on the bands, estimated to be in the mid-50s.

It is one thing to participate and, at the end of the contest, to tot up the score — by the time the results come out you will have forgotten your score — so how much better is it to send in an entry and see in print where you came in relation to those whom you contacted?

We recall, some 15 years ago, a prominent VK6, an overall winner in his day, reportedly being asked why he no longer took part in BERU, as it was then. Apparently there was no challenge left as "anyone could win it from WA"!

No sour grapes, but the West does seem to be in a unique position in this contest compared with the east coast, as it gets openings especially on 15 and 10 which don't seem to appear elsewhere. Of course, you have to be pretty smart too, to grasp the opportunity!

Kevin Smith VK6LW came to the fore again to take out fourth place with a fine score of 6190, which seems to be the first ever over 6000 from a VK. Russ Coleston VK4XA, 4785, was eighth, and Dieter Kiesewetter VK2APK, 12th with 4410.

Al Slater G3FXB decided to try his hand at DXpeditioning, and as ZC4ESB was the overall winner by 165 from VE7CC. Conditions in the UK must have been good as four Gs made the top 10.

For the first time, Australia was represented by a HQ station, VK3WIA, eligible for contact and bonus points, but not for competition. The operating was shared, thanks to Tino Pavic VK3EGN and Roy Reed VK3ELB who between them netted 261 contacts.

ZL never seems able these days to produce more than five entries. The VEs improved to 21, while there was keen competition between 9J2, P29, 5Z4, C56, ZB2, Z23, V2, VO, VU and 6Y5.

A new development was an entry from VE3/W8VSK/M — the call is undoubtedly a Commonwealth one!

## Scores — Top Ten

| Posn | Call | Total | 80 | 40 | 20 | 15 | 10 |
|---|---|---|---|---|---|---|---|
| 1 | ZC4ESB | 6755 | 240 | 755 | 2250 | 2085 | 1445 |
| 2 | VE7CC | 6590 | 428 | 1213 | 1992 | 1697 | 1270 |
| 3 | 6Y5HN | 5225 | 425 | 1215 | 2220 | 1495 | 870 |
| 4 | VK6LW | 6190 | 325 | 1050 | 2045 | 1705 | 1065 |
| 5 | G4BUO | 5352 | 420 | 910 | 1470 | 1592 | 960 |
| 6 | G3MXJ | 5145 | 410 | 750 | 1871 | 1354 | 960 |
| 7 | G3LET | 5117 | 360 | 974 | 1543 | 1385 | 855 |
| 8 | ZL3GQ | 4909 | 579 | 960 | 1390 | 1310 | 580 |
| 9 | VK4XA | 4785 | 425 | 770 | 1730 | 1120 | 740 |
| 10 | G3OZF | 4600 | 325 | 880 | 1345 | 1350 | 780 |

## Australian Scores

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | VK6LW | 6190 | 325 | 1050 | 2045 | 1705 | 1065 |
| 10 | VK4XA | 4785 | 425 | 770 | 1730 | 1120 | 740 |
| 12 | VK3APK | 4410 | 350 | 865 | 1575 | 965 | 655 |
| 23 | VK2AYD | 3327 | 350 | 780 | 1305 | 625 | 267 |
| 27 | VK3ZC | 2905 | 525 | 630 | 810 | 515 | 225 |
| 29 | VK5GZ | 2870 | 405 | 300 | 1135 | 760 | 270 |
| 31 | VK5BN | 2790 | 300 | 575 | 860 | 630 | 425 |
| 41 | VK2DID | 2470 | 300 | 810 | 810 | 525 | 25 |
| 43 | VK3DQ | 2400 | 500 | 525 | 840 | 435 | 100 |
| 47 | VK6RU | 2360 | - | 100 | 930 | 695 | 625 |
| 48 | VK4XW | 2315 | 380 | 560 | 905 | 380 | 100 |
| 50 | VK6HQ | 2183 | - | - | 1243 | 865 | 75 |
| 57 | VK6HA | 2025 | - | - | 1025 | 810 | 190 |
| 61 | VK6AJ | 1880 | - | - | 1880 | - | - |
| 67 | VK5AGX | 1675 | - | - | 1675 | - | - |
| 70 | VK3MJ | 1855 | - | 200 | 875 | 505 | 75 |
| 71 | VK2EL | 1605 | 175 | 325 | 675 | 405 | 25 |
| 77 | VK4TT | 1480 | | - | 1480 | | - |
| 79 | VK7RY | 1405 | 300 | 235 | 645 | 150 | 75 |
| 81 | VK3DNC | 1365 | - | 250 | 680 | 335 | 100 |
| 86 | VK4QD | 1218 | 350 | 460 | 408 | - | - |
| 87 | VK3XB | 1195 | - | - | - | 1195 | - |
| 91 | VK3JI | 1078 | - | - | 1078 | - | - |
| 92 | VK3KS | 1060 | - | - | 285 | 775 | - |
| 93 | VK2AIC | 1030 | - | 125 | 530 | 245 | 130 |
| 94 | VK5HO | 975 | 225 | 175 | 475 | 75 | 25 |
| 98 | VK3XF | 880 | 200 | 275 | 405 | - | - |
| 102 | VK3FC | 823 | - | 823 | - | - | - |
| 103 | VK5RG | 820 | - | 75 | 520 | 225 | |
| 107 | VK3BDH | 730 | - | - | 430 | 200 | 100 |

Single-band entries among the above were:

| | |
|---|---|
| 7MHz | VK3FC |
| 14MHz | VK6AJ equal overseas leader, VK3JI, VK4TT, VK5AGX.. |
| 21MHz | VK3XB |

Other Pacific area results

| | | | | | |
|---|---|---|---|---|---|
| 8 | ZL3GQ | 4809 | 45 | P29PL | 2385 |
| 16 | ZM1AIZ | 4140 | 80 | ZL1AZE | 1400 |
| 26 | ZM1HV | 3021 | 112 | ZL3BJ | 550 |

## RSGB Comments (reproduced from RadCom Nov '90)

Well, the case is proven, CW DXers are certainly not extinct! The 53rd Commonwealth

Contest was a great success with all those who took part and, once again, entries were up on last year (130 vs 128) in spite of severe QRM from a contest organised by a Japanese radio magazine and the usual crop of last-minute equipment failures. Your adjudicator was particularly pleased with the increased numbers of typed and carefully rewritten logs — thank you.

Having failed to meet his past ambition of an outright win from the UK, Al Slater G3FXB resorted to mounting a DXpedition this year. He put in an excellent winning log from ZC4ESB, using a TH3, long-wire and TS830. Al wins the Senior Rose Bowl for his efforts, and my thanks for his assistance with contest publicity (along with VK3ZC, ZL3GQ, ZL1AAS and other willing assistants worldwide). Lee Sawkins V37CC, using no less than seven beams, including a two-element Delta on 80m, had to settle for second place and the Junior Rose Bowl — a very creditable performance nevertheless, scoring around 900 points more than last year. Third place went to Nigel Hoyow 6Y5HN who could not quite match last year's score.

In the UK, Dave Lawley G4BUO took advantage of G3FXB's absence to win the Col Thomas Rose Bowl — though in fact his score would have exceeded Al's 1989 effort, so he was clearly in good form. Entries from Dennis Andrews G3MXJ, using a TH6 and slopers, and Peter Hobbs G3LET, using a ground plane and long wire, were closely matched for second and third UK places. Comparing the leader's stations demonstrates that operator skill and luck are of major importance — in other words, entrants without the resources to erect large aerial arrays need not be discouraged but should try even harder to maintain impetus throughout the 24 hours.

Single-band winners were: VO1NA (80m), ZL1AZE and G3DYY (40m), VK6AJ and G4BVH (20m), ZB2EO and G4BKI (15m) and VE3HX and G3PJT (10m). Certificates of merit go to each of them.

In the receiving section, "Brad" Bradbury BRS1066 was the lone entrant. His log was faultless and should serve as an example to other SWLs — indeed the HF Contests Committee would be more than happy to assist other listeners to enter (please write to the HFCC at RSGB HQ for more information). Brad wins the Receiving Rose Bowl.

A fair sprinkling of exotic DX was active, though of course never enough to satisfy everybody, and it was gratifying to see participation from Africa, the Pacific, Caribbean and India. Local conditions were generally difficult, and all credit to the operators for doing so well with often relatively modest stations. Nineteen-ninety was the first year that additional bonus points were available for working Commonwealth society HQ stations; a total of nearly 900 contacts were made with VK3WIA, ZL6A and GB5CC. We hope that further society stations will be active next year in the spirit of international friendship which is at the root of this contest, and once again we urge all Commonwealth amateurs to publicise the event on-air and in print wherever possible.

Comments received: "An enjoyable holiday" (G3FXB); "My logging program thrice lost about 10 QSOs" (ZL3G1); "A hard slog on Sunday morning" (G4BUO); "Capital fun" (VE2KN); "Best CW event of the year" (G3JJG); "Antennas damaged in ice storm three weeks before contest" (VE6OU/3); "Had 200mm of rain" (P29PL); "HF condx disappointing on Sunday morning, LF condx dismal" (GW4XXF et al); "Didn't intend to participate but got carried away" (VE1AYY); "Called CQ BERU to avoid JA QRM"; (GW3SB et al); "Thank goodness for liquid paper!" (VK6AJ).

**G4IFB**

# HOW'S DX

STEPHEN PALL VK2PS
PO BOX 93 DURAL NSW 2158

The present propagation pattern in our part of the world is a worry for the VK/ZL DXing fraternity. Whilst the North American DX bulletins are praising the "very good and excellent propagation on most bands" we in VK and probably in ZL cannot say the same.

The best way to describe our propagation is "mediocre to very poor". Some DX nets did not operate at all during December, or survived on a very restricted basis, the participants being mainly the locals. Contrary to propagation predictions band openings on 14 MHz were very much later and shorter as expected. The solar flux numbers are constantly changing, but a slow downward pattern can be detected from time to time. Experts predict that the decay of Cycle 22 will start late 1992 and by 1997-97 it will be at its lowest point, after a spectacular start in September 1986.

## Chatham Islands - ZL7

As predicted, (see Jan 91 AR) Eli HA9RE ZL0AAD/ZL7 and Miki ZL0ADN/ZL7 have appeared on the bands on December. They were heard on all bands from 28 MHz to 3.9 MHz. I had a QSO with Miki and I found out the following info about their operation. They will stay on Chatham until 13 January, then they will spend one week in ZL. Then they are off to Niue as ZK2XA and ZK2XB. Miki says they do not have an amplifier and their signal sometimes is lost in the pile-ups. As at 28 December they made approximately 2800 QSOs. A further problem is, that Miki ZL0ADN/ZL7 broke his right hand shortly before departure from Hungary. The hand is in plaster and it is very difficult to operate CW with it. They have a mini beam and several dipole antennas, which they share and use on alternate days. QSL goes to: DJ1ND, Klaus Dittmar, Huehlweg 45, D-8580, Bayreuth, Germany, with self-addressed reply envelope and 2 IRCs or one green stamp.

## Afghanistan - YA

It was reported at the beginning of December that Romeo Stepanenko UB5JRR/3W3RR will go to Spratly Island for a second operation. However, this plan has been changed as Romeo received permission to operate from Afghanistan. This was scheduled to start before Christmas, but it was delayed on account of organizing enough funds, until early January 1991. The permission is for a three months operational period; however at this stage it is not known exactly how long he will stay. It is said that it will be only for three weeks.

Romeo will use the callsign YA0RR in Afghanistan. On the other hand, the well known French DXer, Jackie, F2CW received a six-months job transfer to Afghanistan, and will try to obtain a licence to operate.

## Fiji - 3Ds

Eric 3D2EA, the well known DXer who for the past one year or more, was present almost daily on the ANZA net, has left Fiji with his family including a brand new daughter. Eric's contract has expired and he returned to Sydney on a temporary basis. He is expected to be heard shortly from Africa. Rumour has it, that it will be 5H3.

## The Colvins

Lloyd, W6KG and Iris W6QL were active from Walvis Bay, as ZS9/W6KG and they hope to be operational shortly from Burundi, 9U, as the next stop of their travel through Africa. There are three resident operators in Walvis Bay. The Colvins C9QL activity from Mozambique has been approved by the ARRL DXCC Section. They made 5000 QSOs as C9QL. QSL goes to YASME (See Dec 90 AR.)

## Madagascar - 5R8

Jim VK9NS reported early in December that IK2GNW Adriano will be active from this island state in the near future. The photocopy of Adriano's Madagascar licence was sighted by Jim, and the ARRL has approved the operations for the DXCC. The activity started around Christmas and ended on 4 January. Adriano 5R8GN was most cooperative with net activities, and quite a number of VKs were

able to work this rare country. QSL to Adriano's home address: Adriano Premoselli, Via Rossini 2, I-20080, Cisliano, Italy

## Saint Peter and Saint Paul Rocks - PY0S

The Brazilian Natal Dx Group, with a membership of 17, in a press release dated August 1990, announced a new DXpedition to these rocky outposts of Brazilian Territory in the Atlantic Ocean. The activity will take place in May 1991. They intend to activate PY0S with five operators for 10 days. This is the same DX group which activated Trindade Island for a very short time early in 1990. Let's hope their PY0S operation will be more successful than the one from PY0T.

## San Felix - XQ0

John XQ0X is now active on this QTH. The beam antenna has been erected. This should help with contacts. John has limited knowledge of English and operates on lists with non-Spanish speaking amateurs. Mickey, CE3ESS is the list controller. John will stay on the island several months, so there is a good opportunity to work him. QSL to: (See Jan 1991 AR.)

## Guinea-Bissau - J5

The QSL manager for Alfredo J5CVF advises that Alfredo (home call CT1CVC) will return to Guinea-Bissau on 5 January 1991, and will be active until the end of March. VK/ZL DXers are advised to check into the 14222 net on weekends. In February during one weekend, Alfredo will be active from the BIJAGOS ARCHIPELAGO, IOTA- AF-20. QSL for all operations will go to: CT1DIZ, Jose Alexandre C. Barbosa, Rua Serra Baixo 66, Algueirao, P-2725 Mem Martins, or Box 115, Algueirao, Portugal.

## Interesting QSO's and QSL information

Note: callsign, name, frequency, mode, UTC, month of QSO. ADAR= QSL info in previous issues of A.R.

HV3SJ - 14019 - CW - 0630 - Dec - QSL to: I0DUD Guiseppe D'Aurelio, via Antonio Fogazaro 87, I-00137, Roma, Italy.

XZ2MR(?) - 21012 - CW - 0445 - Dec - in Rangoon (?) QSL to: F6FNU (?) ADAR,

ZS9/W6KG-LLOYD - 14005 - cw - 0600 - Dec - QSL to YASME· PO Box 2025, Castro Valley, Calif, 94546, USA.

T77C - 14021 - CW - 0640 - Dec - QSL to: Tony Ceccoli, Via Della Carrare, RSM, 47031 San Marino.

OA3AWE - TED - 21022 - CW - 0913 - Nov - QSL: via Bureau or direct.

WP4U - Carlos - 21295 - SSB - 0454 - Oct - QSL to: Carlos M. Colon, B-35, 2nd St, Jard - Caparra Bayamon, PR-00619, USA.

D68GA - Vance - 21223 - SSB - 0415 - Oct - QSL to: N6ZV: Don EJones, PO Box 3631, Glendale, CA - 91901 USA.

CT3DZ - Jose - 14192 - SSB - 0828 - Nov - QSL to: Jose Antonio Faria, Sitio Arieiro, P-9000, Funchal, Madeira, Portugal.

KL7RA - Richard - 21237 - SSB - 0600 - Oct - QSL to: Richard A Strand, PO Box 60022, Fairbanks AK 99706, USA.

9N1HMB - 21237 - SSB - 1010 - Dec - QSL to: JA6CBG: via Bureau.

VP8CEO - Martin - 14222 - SSB - 0613 - DEC - qsl to: Martin, MPA PO Box 260, Port Stanley Falkland Islands, South Atlantic.

KD7P/NH7 - Bob - 14155 - ssb - 0642 - DEC - QSL for this contact goes to: KA2XX via the Bureau.

5W1IU - Fuji - 14226 - SSB - 1139 - Dec QSL to: JA1WHG via Bureau.

OD5MM - IRMA YL - 14243 - ssb - 0652 - DEC, QSL VIA: HB9CYH via Bureau.

YN5JAR - Jose - 14226 - SSB - 1215 - Dec - QSL to: Jose, PO 122, Jinotepe - Nicaragua.

YS1MO - Mario - 1422 - SSB - 0557 - Dec - QSL to: Mario Augusto Ortiz Aviles, Calle Cerro Verde, 3032 Miramonte, San Salvador, Central America.

## RTTY News

Syd VK2SG before he departed on 3 weeks well earned holiday, supplied me with the following interesting RTTY snippets:

N4WFN/C6A - 14078 - 0112Z - QSL to: Jeanie Duff, Box 40842, Reno, 89504 Nev. USA>

VP2EE - 14081 - 0217Z - QSL to: KA3DBN.

HP1XZD - 14068 - 0400Z ARQ - QSL to: Panatronicx S.A., Box 2016, Balboa, Panama

TY1PS - 21074 - 001Z - ARQ.

ZP6XDW - 18102 - 0206Z - ARQ.

9Q5UN - 21085 - 2002Z - QSL to: OH3GZ.

VE8RCS - 14083 - 0332Z. This is the Polar Radio Amateur Club, operating from Ellesmere Island. QSL to: Callbook address.

ZS9Z/ZS1 - 14090 - 2254Z - QSL to: OH2BH.

XU1DK - 14088 - 1120Z - QSL to: Toru, Box 80, Koujmachi, Tokyo, 102-91, Japan.

3W3RR - Romeo - will be for three weeks in Afghanistan, and will operate RTTY for 10 of those days, and will QSL via Dima, UT5RP.

## From here and there and everywhere

Yang BV2FB says that more than 600 future amateurs have passed the licensing examinations in BV. At present there are 50 active amateurs there. This number will increase considerably in the near future. BV2FB's QSL Manager is: AA6BB.

I thought, I am reasonably up to date on DX activities, but I was not prepared for a "DX Chain Letter" for "Hams only". This letter arrived on 28 December together with a Christmas card, from a known overseas DX amateur.

The letter urges me to send $1.00 to the first address shown on the list, then it tells me to send 20 copies of the letter to 20 new "ham" addresses and as a happy ending I will receive altogether $8000 in the fullness of time. I will let you in on a secret: I have the $1, but due to the high postal charges, I do not have the money for the postage of 20 letters.

Ken, VK5QW was kind enough to send me copies of the newsletter from the "Southeastern DX Club" located in Atlanta, Georgia, USA. It appears that VK amateurs are popping up in the most unexpected places. At the November meeting of this Club, the guest speaker was Dr Bob Roper VK5PU astrophysicist, who is teaching at the Georgia Technical University. He is well known among his peers and the subject of his talk was: Propagation.

John PA3CXC who operated in ST, said when visiting in Atlanta in November, that the cards of his ST operation will be out by the end of 1990. Incidentally when in ST for the second time, the UN plane on which John was travelling, was shot at and he was grounded for 6 days. John has now a US callsign: KN4NL AE.

Les VK4DA advises that 1Z9CW is a pirate. The alleged QSL manager, KA6V has returned his card and money with that ad-

Neil Penfold VK6NE WIA QSL Manager for VK9 and VK0 advises that operators making contact with a VK9 or VK0 station should write the home callsign of the station worked or his/her QSL Manager's callsign on the back of the card, if the cards are sent via the Bureau. DoTC records supplied for the latest VK callbook appear to have missed about 50% of those for whom the Bureau receives cards.

Neil says as an afterthought: "maybe we have a lot of pirates."

Neil supplied some QSL addresses: VK9YJ to VK3AWY (future March 1991 operation), VK9YQS/O and VK9YQS/LH goes to VK3OT.VK9LE goes also to VK3OT.VK9LI goes to VK2SG. XW4YL goes to JA3UB and VK9CD goes to ZL2CD.

Derek VK3DD says that in the first 12 months of his licence he has worked 158 countries and has 94 confirmed. Not a bad effort.

ET3PG - Bekele - Box 2540, Addis Abeba, Ethiopia, was often heard on Zedam's net (14250). Unfortunately this operation is not yet valid for the ARRL DXCC.

Speaking of the ARRL DXCC, it is known that there is a tremendous backlog in processing these applications. Some additional personnel were assigned to the task of clearing the backlog. As at 16 December, the backlog number was 4108 Processing has begun now on new applications received in Sept 1990, and endorsements received in June 1990.

Festus - 9M8FH has sent 2000 cards and the logs to N5FTR for processing. The wife of Festus, Lorita, has received her callsign. 9M8LL.

14250 kHz in VK is designated as a Fax calling frequency. This allocation is clashing with the net frequency of Zedan YJ3ZH, which has been in existence for approx 20 years. The

"Rare DX net" the other day heard some words "exchanged" between the net controller and a VK station, which maintained that he could not hear YJ3ZH, only a few local VK's. Zedan operates a linear, and he is constantly S9 in VK2

It was a bit embarrassing to hear how an old timer from VK, who also quoted his pre 1929 callsign which started with OA, got tangled up and mixed up in the "Latin American DX Net" It must have been his first experience of a net operation. This net is very expertly handled by Nathan OA4DX at 1100UTC on 14143 kHz on Saturdays and Sundays.

Toby V47KTG after a lengthy stay on St Kitts, left the Island and is going home and will be QRT for a long time (his words).

There are rumours that Kiyoko the Japanese lady, who for the past twelve months criss-crossed the Pacific several times will be active from Central Kiribati, T31 Canton Islands with the probable callsign of T31KY. I do not envy her. There are tons of QSL cards waiting at her Japanese home address which accumulated over the year, and hopefully all will get a reply.

Ben Pinz W2GUP will be active from British Virgin Islands as VP2V, on CW only, until 6 March. He will favour the 40 to 80 metre bands. QSL to home call, direct only, to: Benjamin M Pinz, 44 Murray Hill Ter, Marlboro, NJ 07746 USA.

In honour of Canada's Winter Games, special prefixes will be used to Canadian amateurs during February. These are: VO1-2 will use VO5-6, VY9 will use VG9, and VY2 will be VG2. VG1 will correspond with VY1, and the common VE1 to VE8 calls will sign as CG1 - 8.

It has been reported that Malyj Vysotskij Island, 4J, will be active again in the Northern Spring (March/April).

## Interesting QSLs received

Note W=weeks, M=months, YRS=years, FM=from, MGR=manager OP=operator.

Direct cards received: V44KAY (7WFM OP) J5CVF (3MO FM MGR), PZ1EL (10W FM MGR) V63AY(6 MO FM OP) ZD9BV (2MO FM MGR) NP2CM (4W FM OP) 4U1UN(2W FM OP) D68A(4W FM OP), DK1CS/H44 (7MO FM MGR) BY4SZ(8MO FM OP), XU8DX(11W FM MG) KG6DX (2W FM OP) VP2EXX (6MO FM MGR) ZF1RC(3MO FM OP), CX7BY(2W FM OP) VP5JM (4MO FM MGR) HC1XM (10W FM OP) AH3C(10W FM MGR) FK8FA("W FM OP) 9V1YC (4W FM OP) WL7BYW (6W FM OP) YL2GW(4W FM OP) C21JM(1W FM OP) WP4U (5W FM OP). Received via the Bureau: no reports.

## Thank you

This column would not have been possible without the contribution of the following helpers: VK3DD, VK4OH, VK4DA, VK5QW, VK5WO, VK7MH, VK9NS, CT1DIZ, PS7KM, and the DX Bulletins "QRZ DX" amd "The DX Bulletin".

Many thanks to all of you.

**GOOD DX AND 73.**

**ar**

# POUNDING BRASS

GILBERT GRIFFITH VK3CQ
7 CHURCH ST, BRIGHT 3741

Over the past month I have been receiving answers to my 'entry level' licence proposal, and at present I have 47 completed forms, many of which came with pages of comments and ideas. I was going to list the callsigns of those who have replied, but I noticed that none of the more prominent callsigns was present. Frankly, I expected more effort on behalf of the policy makers who hold various positions as members of councils, executive committees etc in the WIA. Even if you do not have a CW interest, it is important to think about the issue and make your voice heard. So how about it? Send your form now; it will cost you only a stamp and envelope.

It has been quite a while since we have discussed teaching the code, so this month I am presenting a detailed report on Gary Bold's own computer program, as written by himself!

I have already distributed over a dozen copies of the whole suite of Gary's Morse programs and will be happy to send them to anyone who is interested. Just send me your formatted disk (either 360k or 720k) and a stamped addressed return package

Apart from the teaching program, there are the following:

FSEND.BAS sends the contents of an ASCII file as audio Morse on the system beeper,

GEJMO BAS reads Morse from a key connected to the RS232 port,

RNDM.BAS sends random code groups (not for teaching),

TRI.BAS triambic keyer simulator,

RWD.BAS random word generator.

## Instructions:

Morse Teaching Program "TEACH.BAS"
For IBM PC/XT/AT and Clones
Version 2.0; 13 November '87
Gary E J Bold ZL1AN
15 Kauri Rd
Birkenhead
Auckland 10
Phone: 43 7240

## 1. Introduction

TEACH is written in standard MICROSOFT BASIC. I run it under DOS 3.2 with GWBASIC on a 4.77MHz Cleveland. Just load it and read the instructions. See you later.

## 1a. Later on

Hah! So you tried it and came back? You were probably disappointed, because it seems so boring. Well, learning Morse IS boring. You probably couldn't figure out what it was trying to do. I'll give you a resume:

TEACH asks you to "type the letters as I send them". It times your response. If you don't respond (if you don't know the character) it waits a decent time and tells you what it was, and sends it again. It adjusts the time it waits by averaging the time you take to respond, so you don't have to be a good typist. In fact, your response time has NOTHING to do with its evaluation of your performance. It DOES keep track of your errors. When your error rate is low enough, and no one character is giving too much trouble, it introduces a new character. All characters are sent randomly, but the newer ones, or the ones you have been getting wrong, are sent with greater frequency.

TEACH encourages you to guess. If you guess RIGHT, it puts the letter on the screen as a little reward. If you guess WRONG, it sends the character again without echoing, and waits again. so it gives NO negative reinforcement.

At the end of the session, you get a couple of numbers to enable you to keep track of progress. The "mastery coefficient" says "how well you know each character in use". That is, if you are getting ALL characters correct EACH time they are sent, AND you have been doing this long enough to drop all the error probabilities as low as possible, this will be 100. Zero means you're getting everything wrong. The "overall figure of merit" is the same number, normalised by the number of characters in use when you stop. There are 40 characters. If you're guessing 80 per cent correctly and 20 are in use, this is 80 * (20/40) or 40. So the first number is something to do with "how fast you catch on and retain the characters", the second is "how far down the road you have gone".

## 2. Background

TEACH is my implementation of a computerised Morse code teaching philosophy originally published by Howard Cunningham in QST, May 1977. There are three main ideas:

(a) A computer is a non-threatening, impersonal thing. People don't get upset by making mistakes if only a computer is listening, whereas they get flustered and embarrassed making fools of themselves in front of people, especially "experts" So a computer should be a good tool for teaching simple mastery skills.

(b) New code symbols should be introduced one at a time, in "postponed discrimination order". This means long, uncommon symbols should be introduced first, to form the habit of listening to the whole symbol before deciding what it was. Also, if the uncommon symbols are introduced LAST (as is usually the case) you don't get nearly as much practice listening to and decoding them! With TEACH, by the time all the symbols have been introduced, you REALLY KNOW all those "terrible uncommon letters at the end of the alphabet".

(c) The teaching process should be ADAPTIVE. That is, feedback from the trainees should be used to modify the teaching process. There is no way a taped teaching system can do this. However, a computer can keep track of all sorts of things. Here it monitors the error rate of each character, the average error rate, the maximum error rate, and the response time of the student. Using these inputs, it decides which characters need to be sent most often, and when new characters should be introduced. There are an infinite number of possible ways this can be done. Howard's algorithm was beautifully simple and logical, so I have just adapted it slightly.

(d) The characters should be learned by SOUND, not SIGHT, and indexed the RIGHT WAY AROUND. Everybody has more trouble READING than SENDING. Hence the "table lookup" that the mind has to do should be ordered with the CHARACTERS indexed by their SOUND, not the SOUND or PATTERN indexed by CHARACTER. For example, if you learn that

"C is -.-." (-.-. preferably, rather than -.-. if)

you have learned to relate a CHARACTER to a PATTERN, which has to be CONVERTED into a SOUND. So your mind conceptually has to do an ordered search of the table ("is it A? Is it B? Is it C? yes!"). If you learn the characters indexed by sound, your mind is able to do a "hash table search", (jump straight to the right character) which is much faster. ("dahdidahdit — that's C"). If you don't understand that, it doesn't matter. Just trust me; I know what I'm doing. This is true. You will learn Morse symbols using TEACH in a way that will make it easier to gain speed.

(e) At the session end, you get some diagnostic information.

(i) The number of characters in use (maximum 40).

(ii) Your "quickness coefficient". This is supposed to represent roughly how fast you catch on. It's computed at line 8050. This will be zero if your average error probability, over all characters, is 1 — that is, you haven't remembered ANY character correctly. It will be 100 if currently you are not making ANY mistakes on any character that has been introduced. (If a character has JUST been introduced, however, there may not have been time for you to reduce its error probability to the minimum allowed).

(iii) Your "figure of merit". This is the same number, normalised by the total number of characters in use. That is, when you know ALL characters PERFECTLY, it will be 100. Then you can stop.

Unlike my Commodore 64 version of TEACH, there are no machine language subroutines. GWBASIC supplies intrinsic SOUND statements which can be used to form the symbols. The frequency (FRQ) code speed timing is set at line 20. DOL and DAL are the dot and dash relative times. The code speed is supposed to be 12wpm. Some users have suspected that this is wrong. It is correct on my Cleveland, running at 4.77MHz, and my Concord, running at 7 2MHz, but it may be BASIC version dependent. You can test the speed on your machine and reset it, or set it to ANY speed, as follows.

There is a sub-routine at line 4000 which sends a dotstream for 10 seconds and counts the number of dots. From this it works out the correct value of parameter DOL (dotlength) for 12wpm, using the fact that 10 dots/second is 24wpm. Call this sub-routine in immediate mode. It will beep for 10 seconds and tell you what the parameter DOL at line 20 should be set to. The default value is 1.82, correct for my machines. If yours says something different, set it to that. For 15wpm, set it to 12/15 times that etc. If you do this and save the program, it will be correct from now on.

The audio frequency is parameter FRQ, also set at line 20. This number is used as a parameter for the SOUND instruction (see lines 1010, 1030). It's the frequency in Hz. Change it if you don't like 800Hz.

Let me know how you get on — if you can spare time to drop me a line.

REGARDS & 73,
GARY E J BOLD

ar

# EDUCATION NOTES

BRENDA EDMONDS VK3KT
FEDERAL EDUCATION CO-ORDINATOR
PO BOX 445 BLACKBURN 3130

Amateur examinations are generally devised to try to determine the extent of a candidate's knowledge — ie the amount of factual material retained — and ability to manipulate this data in some way. Rarely do we set out to determine the ability to extract information from a piece of text, or find a specific fact or theory in a mass of reference material. We tend to assume that the research or referencing skills will develop of their own accord, or that students have some innate ability which will be sufficient.

Few candidates pass the amateur examinations without being exposed to a few of the traditional text and reference books, but the emphasis at the early stages is always on trying to cram the facts and processes into the memory banks, and then being able to retrieve them as required. However, I tend to doubt that straight memorising is so important. A few years down the track most will not be prepared to trust their memories completely, and it then becomes important to be able to find the desired data easily. New material that has not been learnt must also be available for evaluation and consideration, and changes in regulations, agreements or accepted practices occur at frequent intervals. The concerned amateur must be able to keep up to date with the growth and development in several fields.

I doubt if any reader can look at any of the pages of reference material in this issue and say "I know all this. It has not changed since I learnt it." So an issue such as this becomes doubly important, as both a ready source of information and an updating of the data.

Let us encourage the new recruits to learn how to find information as well as how to memorise it; to be aware that changes occur, and to be sufficiently flexible to accept the changes and live with them.

Many candidates will be attempting examinations within a few weeks. They should be reminded that a pass in the examination does not free them from all future needs to learn, to find out, and to understand.

My best wishes to those candidates.

73 Brenda VK3KT

Federal Education Co-ordinator, WIA

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# SPOTLIGHT ON SWLING

ROBIN L HARWOOD VK7RH
52 CONNAUGHT CRES WEST LAUNCESTON 7250

Well, the momentous changes in Eastern Europe finally reached one of the most closed societies in the entire world. I am referring to Albania that small country on the Mediterranean, between Greece and Yugoslovia. Those who have been long-term listeners to Radio Tirana, will easily remember that it has carried propaganda in the Stalinist format and many found it to be one of the most boring European broadcasters.

Albania broke with the Soviet and Chinese Communist parties and went alone until it couldn't ignore the changes that swept Eastern Europe and the USSR. Late in December 1990, the domestic pressure finally built up as the citizens wanted change, after over 45 years of self-imposed isolation. Other political parties were formed as bans on political and religious association were lifted. R Tirana at least, has now begun to broadcast a more balanced output with western music, replacing the political rhetoric that has long dominated their broadcast output. Listen for yourself on 9500 from 0630 UTC.

At the time of compiling this column, there was still a fortnight to go before the UN deadline came into effect over the Iraqi invasion of Kuwait. Yet it was apparent that things were brewing, judging by the increased amount of traffic on US military circuits on HF. Listen on 11267 or 18002kHz USB and you will hear quite a deal of traffic, presumably from or near the Gulf region. The best period is around 0300 to 0600 and again from 1000 UTC. Monitoring these channels brings back memories of high density traffic over HF circuits during the Vietnam War.

Recently, a friend brought me his Kenwood R2000 to compare it with the Icom R70 that has been the principal receiver at this location. The R2000 has 10 memories with the facility of being able to scan between two predetermined points, eg 7.0 to 7.15MHz. It has an inbuilt clock with which you set up to record programming in your absence. It has the standard modes such as USB, LSB or AM plus FM, which is standard, not an optional extra, as is the case with Icom R70. Sensitivity appears to be down compared to the Icom and it is a poor performer on MW, adequate on SW. The mode I primarily utilise, Exalted Carrier Selective Sideband (ECSS) on the Icom is virtually non-existent on the Kenwood. Yet it does appear to be slightly more sensitive on the higher end of the band, around 25MHz and above.

Incidentally, it does pay to install a coaxial feedline as I have recently found out. I have been lent a trap dipole for 80 and 20 metres and it clearly is more resonant than my humble G5RV. This same friend has also found that a coaxial feed minimises electrical noise compared to an open-wire feeder.

Well, that is all for February. Remember that you can write to the address, or those with packet facilities can leave traffic for me at VK7RH @ VK7BE-1 Launceston. **ar**

# REPEATER LINK

WILL MCGHIE VK6UU
WATERLOO CRESCENT LESMURDIE 6076

## Pagers

If you operate on two-metres FM, chances are you will have heard pager interference. That awful loud noise of several seconds duration that makes you dive for the volume control. Pagers operate just above the top end of the 2m band. Just above is an understatement, as little as 12.5kHz above 148MHz. Not all pagers operate on this frequency, but are found from this frequency up. The power levels that pagers are run are around 500 watts ERP. Little wonder that they have the potential to cause problems in the 2m band.

Pagers are not going to go away, and the problem they cause to our repeaters on 2m can only increase. To minimise the interference they cause, it is important to understand how this interference is caused. Overload in the repeater's receiver producing intermod signals is the major problem. Intermod, in simple terms, is the mixing of two or more signals in a non-linear device to produce a new signal on a new frequency. If this new signal is on the repeater's receive frequency, then you are stuck with it. The repeater's receiver is already up against it, as there is one very strong signal present when the repeater is in use; that being the repeater's transmitter. What all this means is that it is a tough environment. In fact, the problem is not just limited to the repeater's receiver. The intermod signal can be generated in another receiver and radiated into the repeater's receiver. This other receiver does not even have to be turned on. Furthermore, the intermod can be generated in the junction between metal objects on the tower and guy wires, and that includes the repeater's antenna.

With all these problems it is a wonder that more intermod signals are not heard on our repeater network. However, an understanding of the problems results in solutions to most of the pager overload on 2m. The choice of a receiver with high performance when subjected to strong nearby signals is the most important. All other cures for intermod are needed to prop up the receiver's overload performance. Following is a number of suggestions to reduce pager intermod.

1. Only use an RF pre-amp if it is the sole solution to poor receiver sensitivity.
2. If you do use a pre-amp, place a very lightly coupled cavity filter between the output of the pre-amp and the input to the receiver. Cavity filter insertion loss of up to 10dB results in a very narrow bandwidth such that signals 100kHz away are a further 10dB down. This method was successful in eliminating pager interference from one of our repeaters in VK6.
3. Improve the RF isolation between the receiver and transmitter, as the intermod problem may be between a pager and your transmitter.
4. Install a front-end crystal filter. Yes, that's right. You can purchase a 50-ohm input output crystal filter custom made to your repeater's receive frequency. With a bandpass of 15kHz and all other frequencies greater than 20dB down it may solve your intermod. Such filters are not cheap (around $150), but it is one more way of removing the pager noise. By the way, these filters are made in Australia.
5. Orientate your receive antenna away from the pager.
6. Installing a normally coupled cavity filter may help in some situations, but with the pagers being so close frequency-wise, a single cavity filter is only a few dB down and usually has no effect.

## CTCSS and Pagers

Fitting CTCSS to a repeater's receiver would not greatly reduce pager intermod. Only intermod that triggers the repeater without there being an amateur signal would be eliminated. An amateur signal running CTCSS would still suffer from pager intermod, if the pager signal is stronger. This is an important benefit in reducing pager intermod. The pager noise at the end of an over, where it is most often heard, would be gone but CTCSS is not a total solution to his growing problem.

Not all pager intermod you are hearing is at the repeater. A considerable amount can be produced in your receiver. Depending where you operate, most of the pager intermod you are hearing may be being produced in your receiver. If your local repeater is CTCSS encoded so that you can run your receiver in the CTCSS mode, then intermod problems in your receiver can be reduced.

## Positive Offset

Consideration is being given to reversing the positive offset above 147MHz to a negative offset. If this is made mandatory, it will only limited the options available to repeater co-ordinators to manage pager intermod problems. A better solution is the one that is currently being implemented. that being reversing the frequencies where a reduction in intermod results. Pager intermod occurs not only because the repeater's receiver is close in frequency, but has the wrong combination of frequencies — some close, some further away. There would be situations where a negative offset above 147MHz suffered more pager intermod than a positive offset. Repeaters in the 146MHz to 147MHz segment also suffer from pager intermod, and they enjoy a frequency separation away from the pager band off up to 2MHz. Let us not limit our options by making the reversal of the 147MHz to 148MHz mandatory. Close frequency co-ordination would be essential, as two repeaters operating on the same frequency but with opposite offsets would lock each other up whenever propagation permitted.

## Postscript

This article is the first to be written using a computer and word processor. Yes, the world of computers has finally arrived for me. I now know why so many amateurs are rarely heard from again after purchasing a computer. 73.ar

# AMSAT AUSTRALIA


MAURIE HOOPER VK5EA
11 RICHLAND ROAD NEWTON SA 5074
PACKET: VK5EA@VK5WI


**National Co-ordinator**
Graham Ratcliff VK5AGR
**Packet Address:** VK5AGR@VK5WI
INFORMATION NETS
AMSAT Australia
**Control:** VK5AGR
**Amateur check in:** 0945 UTC
**Sunday bulletin commences:** 1000 UTC
**Primary frequency:** 3.685MHz
**Secondary frequency:** 7.064MHz
(7.064MHz is the frequency presently in use)
AMSAT SW Pacific 2200 UTC Saturday, 14.282MHz

Participating stations and listeners are able to obtain basic orbital data including Keplerian elements from the AMSAT Australia net. This information is also included on some WIA divisional broadcasts.

## AMSAT Australia Newsletter and Computer Software

The excellent AMSAT Australia Newsletter is published monthly by Graham VK5AGR on behalf of AMSAT Australia and now has over 310 subscribers. Should you also wish to subscribe, send a cheque for $20 payable to AMSAT Australia addressed as follows. AMSAT Australia, GPO Box 2141, Adelaide 5001.

The Newsletter provides the latest news items on all satellite activities and is a "must" for all those seriously interested in amateur satellites. Graham also provides a software service in respect to general satellite programs made available to him from various sources. To make use of this service, send Graham a blank formatted disk and a nominal donation of $10 per item to AMSAT Australia, together with sufficient funds to cover return postage. To obtain details of the programs available and other AMSAT Australia services, send a SASE to Graham.

## BADR Decays

HR AMSAT News Service Bulletin 356.03 from AMSAT HQ

Silver Spring, MD 22 December 1990

To all radio amateurs BT

Pakistani 'Amateur' Satellite Re-enters Earth's Atmosphere

A Pakistani satellite launched by the People's Republic of China earlier this year re-entered the Earth's atmosphere either late on 8 December 1990 or early on 9 December 1990. The satellite, dubbed BADR, had an output frequency of 145.825MHz, a frequency also used by UO-11 and DO-17. It was never quite understood why the Pakistani Government assigned the 145.825MHz output frequency when there was no amateur transponder on board or any published telemetry information which might have been of use to the amateur service

Below is a beginning and ending snapshot of selected orbital parameters of BADR

| 1990 Day | Perigee (km) | Apogee (km) | Eccentricity | Period (min) | Mean Motion Decay | Orbits/Day |
|---|---|---|---|---|---|---|
| 219.0 | 203.6 | 934.8 | | 96.05 | 0.0023 | 14.99 |
| 342.4 | 126.8 | 189.8 | 0.0033 | 87.45 | 0.2155 | 16.47 |

## Microsat Update

HR AMSAT News Service Bulletin 356.02 from AMSAT HQ

Silver Spring, MD 22 December 1990

To all radio amateurs BT

Microsat Engineering Team Status Report as of 21/12/90

## Summary:

AO-16 — sending PHT telemetry, file system running for beta test.

NASA 2-Line Keplerian Elements 20 Dec 90

```
AO-10
1 14129U 83 58  B 90341.95721150 -.00000028  00000-0  0000000 0  6254
2 14129  25.9787 171.4752 5963895 198.6418 123.7551  2.05881045 56284
UO-11
1 14781U 84 21  B 90348.59001325  .00001862  00000-0  34812-3 0  8903
2 14781  97.9280  35.0711 0013549  40.4256 319.8075 14.65971484362393
MIR
1 16609U 86 17  A 90352.55649387  .00010029  00000-0  12381-3 0  1497
2 16609  51.6060 121.9393 0024874  19.0372 341.1684 15.60505683276897
RS-10/11
1 18129U 87 54  A 90351.85617242  .00000340  00000-0  36228-3 0  4635
2 18129  82.9253 192.8256 0011303 336.3188  23.7477 13.72131792174632
AO-13
1 19216U 88 51  B 90350.40377437 -.00000209  00000-0  99999-4 0  2267
2 19216  56.8563 120.5684 7087146 242.6692  30.6150  2.09704934 19197
UO-14
1 20437U 90  5  B 90348.72021130  .00000504  00000-0  21575-3 0  2827
2 20437  98.6882  64.1817 0011775 351.2327   8.8686 14.28815910 46645
UO-15
1 20438U 90  5  C 90344.64739052  .00000301  00000-0  13603-3 0  1775
2 20438  98.6898  60.0706 0010697   2.6758 357.4489 14.28494977 46057
AO-16
1 20439U 90  5  D 90350.65779471  .00000553  00000-0  23440-3 0  1817
2 20439  98.6917  66.3270 0011496 346.3025  13.7848 14.28917213 46928
DO-17
1 20440U 90  5  E 90350.64728474  .00000591  00000-0  24966-3 0  1811
2 20440  98.6894  66.3379 0011497 347.4225  12.6667 14.28976305 46923
WO-18
1 20441U 90  5  F 90350.62507160  .00000527  00000-0  22411-3 0  1819
2 20441  98.6916  66.3578 0012177 346.9534  13.1332 14.29054441 46927
LO-19
1 20442U 90  5  G 90349.97899473  .00000520  00000-0  22088-3 0  1821
2 20442  98.6915  65.7509 0012420 348.5551  11.5368 14.29126182 46835
```

DO-17 — sending PHT telemetry, no other changes.

WO-18 — sending PHT telemetry, dark image testing.

LO-19 — sending PHT telemetry, being reloaded.

FILE SYSTEM: We have again loaded what we hope is the final version of the first general release of the file system. UO-14 has also been reloaded. This latest reload was caused by a bug that was added while fixing several other bugs.

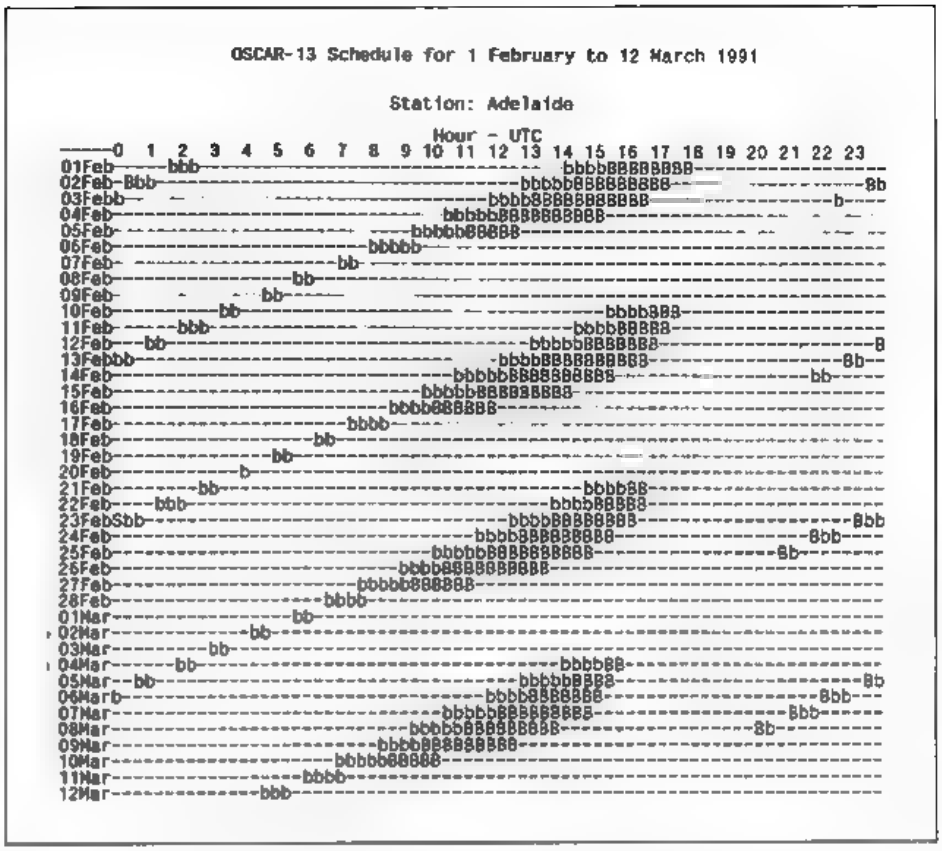
Jeff Ward GO/K8KA has also made some tweaks to the final version of the general release of PG. It is currently on UO-14, and we'll start it broadcasting from AO-16 this weekend. It will be compressed with ZIP. PB, the broadcast receiver, has been available on CIS for several weeks, and is available on several other BBS systems. The first version of PG was released on CIS and via UO-14 on 19/12/90.

UO-14 has already been released for general access. We want to do one more round of beta-tester access on AO-16 before exposing it to the masses. The previous bug was found quickly because each of the beta testers sent in their PG.LOG file which was matched to the post-mortem dump taken from AO-16. The next target for AO-16 release is 24 December, provided there are no further problems.

If you get a copy of PG, do not try to use it on AO-16 until you see a specific message announcing that AO-16 is available for general use. You will need a special command in the PG.CFG file to access AO-16 and this command will not be documented until AO-16 is available for general use.

TELEMETRY: The diagnostic "wash" status message has been removed in this upload. The edac error counter now appears in the status message, in status [17]. This status cell was previously unused. We have done this to reduce the overhead on the downlink.

AO-16: The AO-16 BBS was restarted on 21 December 1990 at 19:14 UTC. At this writing, it has survived three passes over the US with a reasonable load. WD0E, WB9ANQ, N4HY and NK6K generated 290 activity log entries, activities like logon, logoff, directory, upload and download. We will continue testing with a limited number of beta users, if all goes well, AO-16 should be open for general use in a few days. The more discriminating users will notice that the AO-16 downlink, when broadcasting, is different than it has been in the past. This version of the BBS uses only one buffer for the broadcast output queue; the previous version used three. That meant that, even during slow operations like an upload file close, when the entire file is scanned and the header checksum is computed, there were enough buffers for the DMA to keep the transmitter busy. With only one buffer, there will be occasional gaps for as much as a few




## SATELLITE ACTIVITY FOR SEPTEMBER/OCTOBER 1990

**1. Launches**

The following launching announcements have been received:

| Int'l No | Satellite | Date | Launch Nation | Period min | Apg km | Prg km | Inc deg |
|---|---|---|---|---|---|---|---|
| 1990- | | | | | | | |
| 085A | PROGRESS M-5 | 27 Sep | USSR | | | | |
| 086A | METEOR 2-20 | 28 Sep | USSR | 104.2 | 975 | 953 | 82.5 |
| 087A | COSMOS 2101 | 01 Oct | USSR | 89.2 | 321 | 180 | 64.8 |
| 088A | USA-64 | 01 Oct | USA | 356.9 | 20413 | 165 | 37.6 |
| 089A | PRC-33 | 05 Oct | China | 89.3 | 295 | 199 | 56.9 |
| 090A | STS-41 | 06 Oct | USA | 90.2 | 303 | 280 | 28.4 |
| 090B | ULYSSES | 06 Oct | USA | | | | |
| 091A | SBS-6 | 12 Oct | ESA | 795.5 | 36450 | 7675 | 3.1 |
| 091B | GALAXY VI | 12 Oct | ESA | 641.6 | 36419 | 201 | 6.9 |
| 092A | COSMOS 2102 | 16 Oct | USSR | 89.7 | 360 | 192 | 62.8 |

**2. Returns**

During the period 45 objects decayed, including the following satellites.

| | | |
|---|---|---|
| 1990-069A | COSMOS 2069 | 01 Oct |
| 1990-082A | RESURS-F9 | 21 Sep |
| 1990-089A | PRC-33 | 23 Oct |
| 1990-090A | STS-41 | 10 Oct |

**3.Notes**

1990-085A PROGRESS M-5

Docked with spacestation MIR on 29 September 1990 to deliver consumable and other cargo

1990-090B ULYSSES

Was deployed from the orbiting STS-41. Its mission is to explore the heliosphere over the full range of latitudes, especially the polar regions.

1990-091A SBS-6 and -091B GALAXY VI

These telecommunications satellites were launched by European Space Agency, using the Ariane 441 launch vehicle, from Kourou French Guiana, for the United States.

**BOB ARNOLD VK3ZBB**

seconds. The number of broadcast buffers may be increased in the next version; this version is an experiment to see how much free memory is available in the minimum configuration. Aside from causing the developers' hearts to miss a beat, the pauses are not a problem.

DO-17 Now that the AO-16 BBS software is stabilising, attention is turning to DOVE. N4HY is to begin preparing a special loader for DOVE shortly.

WO-18: There have been no operational changes to WO-18 this week. The WEBERSAT command station has been downloading various dark side images this week to gather information on minor CCD defects which can be subtracted from normal images. They are also attempting to see if, with sufficient post-processing, stars can be discerned.

LO-19: LUSAT was reset to the ROM and rebooted early on 22 December 1990 UTC in preparation for loading the BBS. The BBS code will be loaded from the LUSAT command station in Argentina. There is no announced date for general availability of the LO-19 BBS.

The following recommendations for TNC parameters are made for use with the AO-16 [illegible].

These settings are compatible with the multi-user 1200-baud downlink.

Activity Log: The following request is made by GO-K8KA for UO-14 and by NK6K for AO-16. Please do not download the activity log files (ALyymmdd). They are very large now, primarily for use in debugging, and several downloads per pass is inefficient. The previous day's AL file will be put in the broadcast rotation. A program to display the file will also be broadcast.

## UO-14 Update

HR AMSAT News Service Bulletin 356.01 from AMSAT HQ
Silver Spring, MD 22 December 1990
To all radio amateurs BT
UoSAT-OSCAR-14 File Server Available for Access

After final testing of groundstation and spacecraft software by the beta testers, the UO-14 File Server 'PBBS' is being released for general access. Any suitably equipped stations are welcome to use the system. The UO-14 engineering team encourages users to report their early experiences of UO-14 BBS operations. They are particularly interested in hearing how you have connected 9600-baud FSK modems to various radios.

UO-14 is currently broadcasting a file containing groundstation client software for IBM-PC compatible computers; users who are already receiving the PACSAT Broadcast Protocol transmissions can 'bootstrap' themselves simply by receiving this broadcast. The file, number 791, is a .ZIP file containing PG.EXE and associated documentation. This file will also be posted on Compuserve and will migrate to other information sources. If you are not already using the PACSAT Broadcast Protocol, make sure to get the PACSAT File Header utility programs PFHADD.EXE and PHS.EXE as well as PG.EXE. The GO/K8KA groundstation software works on both AO-16 and UO-14. As updated versions of the PACSAT Protocol Suite are released, they will be carried as files on the satellites themselves in the same way that file 791 is carried now. The AMSAT Software Exchange is making copies available of this and other PACSAT related software via AMSAT Headquarters.

You MUST have proper groundstation software before you can access the UO-14 or UO-16 file servers. The PACSAT Protocol Suite has been specified and widely published. At least two software authors (other than GO/K8KA) have used these specifications and written groundstation client software for the IBM; implementations for other popular computers should follow in the New Year. ar

# DIVISIONAL NOTES

## FORWARD BIAS

PHIL CLARK VK1PC

Due to pressure of other affairs, I have not been able to write this column for some time, and this will be the last during the term of the present committee.

The February meeting is the Annual General Meeting of the VK1 division and we would welcome any new members on the committee, especially some of our younger members. What about it? How about nominating for committee? This could be your chance to get some of the things that YOU want the division to provide for the hobby of amateur radio. It is certainly not an arduous task and does not take up a great deal of time.

If you are not able to serve on the committee, how about lending a hand to staff the divisional office. Volunteers are needed for a couple of hours on Monday and Wednesday evenings from 6pm to 8pm, on Fridays from 11am to 2pm and Saturdays from 9am to 12 noon. If you can help out, even if only occasionally, please contact Gavan VK1EB, QTHR.

### Technical notes

Two members of the division, Tom VK1BUD and Dick VK1ZAH, have developed a simplex (single frequency) repeater for emergency communications use. This "store-forward" repeater has been used in exercises and proven effective and simple to place into service. A unit has already been purchased and used by the Queanbeyan headquarters of the State Emergency Services of NSW to improve its communications. The fact that the device can simply be plugged into almost any existing radio on any frequency to change it into a repeater gives it great versatility. It can be set up to record a maximum-length message from 30 seconds to about two minutes. The repeated message is identified by a tone burst at the start and finish, and is only as long as the input message, up to the maximum length. The options allow for a Morse code identification to be included if required. The current consumption is very low and the device can be readily operated from dry cells. Enquiries about this device can be made to Tom VK1BUD via the VK1 division, GPO Box 600, Canberra ACT 2601. It is available at a cost of $250 in kit form (no box) including post and packing, or $300 assembled in a box and tested.

Some time ago Neil VK1KNP decided to put onto one board a 1200/300-baud modem based on the 7910, together with a 4800-baud modem based on the HAPN 4800-baud modem. This circuit has been built and tested and a complete set of instructions written. A run of 20 circuit boards was made in August 1990 and a second run of 20 boards was ordered in October. This board is designed to run with a TNC and MUST be used in conjunction with one. It is NOT suitable for use with the Commodore 64 running AAPRA, Digicom or similar software. The modem board can be run from either a single 12-volt supply using an on-board negative rail generator, or it can be run from an external +/- 12-volt supply by deleting the on-board generator. The board is available from the Canberra Amateur Packet Radio Group, ACT Division, PO Box 600, Canberra ACT 2601, at a cost of $40, which includes post and packing. The kit includes the printed circuit board, full instructions and circuit details.

### Demonstration Station

George VK1GB and his band of hardy helpers have been doing a great job of promoting the hobby of amateur radio in the "deep" north, with the demonstration station at the Hall markets on the first Sunday of each month. Volunteers are still needed to help man (person?) the station and to explain the equipment and hobby to anyone interested. George has reported considerable interest at the station and it has already attracted some new members to the division. If you can help out with this station, please contact George VK1GB QTHR or via 2m. You do not need to spend much time and you don't have to come every month, but the more we have, the less each has to do. So what about it? Will YOU come along and help promote amateur radio to the community? George would certainly be pleased to hear from all those who can help out.

73 UNTIL NEXT TIME,
PHIL

## VK2 NOTES

TIM MILLS VK2ZTM

**AGM Time:** It seems that no sooner is one AGM held than another is upon us. The 1990/91 AGM of the NSW division will be held on Saturday afternoon, 4 May 1991 at Amateur Radio House, 109 Wigram St, Parramatta. The closing date for agenda items and council nominations will be 2pm on Wednesday, 20 March 1991 at the registered office, 109 Wigram St, Parramatta.

**WICEN (NSW) Inc:** Some of the coming events for WICEN include the Bungonia cave rescue on the weekend 9/10 March. Morton VK2DEX is the co-ordinator. The mid-year VRA conference will be at Narrabri 16/17 March, and the annual conference in Sydney in September. The Hawkesbury Canoe Classic is 19/20 October. An 80m net for WICEN has been recommenced on 3620 +/- QRM Tuesday evenings. Photo IDs are being introduced for WICEN (NSW) members. These will be based on a three-year membership period from 1 July 1991. Some interim photo IDs have been issued in some regions. WICEN membership continues to expand. Details can be obtained from your local club or write to PO Box 123, St Leonards. A questionnaire was included in the last WICEN newsletter. If you are still to return yours, please do so.

**Bookshop:** A reminder that the division maintains a large range of publications. Stocks are available of the 1991 ARRL Handbook and USA and international callbooks. Only a few of the Australian callbooks remain.

**Coming Events:** The annual Gosford Field Day will be held on Sunday, 17 February. Next exam is Tuesday evening, 19 February. Applications close 29 January. Urunga Convention will be held over Easter. The next Trash and Treasure will take place on Sunday afternoon, 24 March, a week earlier due to Easter. Would clubs and groups keep the office advised of major activities, meetings and exams so that enquiries can be answered on your behalf.

**Council Meetings:** Recently it was decided to conduct meetings twice a month, usually the second and fourth, which means that meetings will often conclude before midnight!!

**Surplus Manuals:** Aub VK2AXT Divisional Librarian has been sorting out the range of equipment manuals held in the library. There is now an excess of some and they will be disposed of. Listen to the VK2WI broadcast for details.

**New Members:** A warm welcome is extended to the following who became members of the NSW division towards the end of last year.

| | | |
|---|---|---|
| A Asahina | VK2BEX | Killara |
| G A Berry | VK2XBZ | Narara |
| A B Burrow | VK2FOW | Coffs Harbour |
| C D Burnett | VK2XRL | Nimbin |
| J P Cabouche | Assoc | Port Louis, Mauritius |
| D T M Connor | VK2MJX | Wyoming |
| N R Cunningham | VK2RD | Port Macquarie |
| F W Eade | VK2AEE | Kotara |
| R J Hughes | VK2YOW | Wollstonecraft |
| S G Mamo | VK2NY | Gerringong |
| D Pack | VK2GIO | Mt Pritchard |
| M J Ramplin | VK2XMR | East Maitland |
| B J Ward | VK2WBJ | Caringbah |

**Publicity:** Good and bad. Amateur radio received extensive publicity with the first AUSSAT/Gladesville test last November, and no doubt with the recent test at the end of January. *Electronics Australia* for this month has a report by Tom King VK2ATJ on the first test. The ABC provided publicity for amateur radio in the Bob Hughes segment on Sunday, 23 December. Bob conducted a 10-minute interview with divisional president Roger VK2ZIG and Julie VK2XBR which was trans-

mitted to New South Wales and Tasmania. Amateur television can become very public, as more people discover the UHF channels. On New Year's Day, it appears that a member of the public was searching the UHF spectrum trying to copy a cricket broadcast from outside Sydney. He came across an ATV transmission which he just had to tell one of the newspaper groups. A report appeared in one of its columns stating that instead of cricket they found a "clear picture of a fat man about 50, sitting in a pair of underpants, looking out at them". The report went on to describe someone's shack, together with a jumbled version of his callsign. No doubt it was a hot day and the supposed underpants would have been shorts. It is important that vision transmissions do not get the public wondering what it is all about. It is going to be hard enough to retain spectrum space for wideband transmissions without giving grounds to remove frequencies for more 'important services'!! Remember, WARC 92 is drawing

## VK3 NOTES

JIM LINTON VK3PC

### Victoria's RD Win

After a drought of 13 years the WIA Victorian Division has won the Remembrance Day Contest. Congratulations go to those individuals and club station which entered the contest and submitted logs contributing to the win.

Behind their collective effort was a driving force encouraging greater participation in the contest. Geoff Hudson VK3VR had worked hard to ensure Victoria won in 1990. Seven years earlier his friend Greg Williams VK3VT produced a contest kit and tried to lift the level of participation. Greg ran a campaign centred around the free kits and pushed for more VK3s to get into the contest, despite the apathy which seemed to be rife.

After a poor performance in the contest over a number of years, Geoff VK3VR decided to target 1990 for a maximum encouragement effort. "Geoff worked really hard and was the driving force behind the move in 1990 for Victoria to win," Greg Williams said. Among the new things Geoff did was to effectively use the VK3BWI broadcast to promote the RD contest.

He publicised the availability of a free contest kit — several hundred were distributed. Geoff also produced RD contest software. Working quietly behind the scenes he prepared scripts for VK3BWI, including a series of hints and words of encouragement from regular contesters. Those who had a score of 300 or more in the previous RD contest were sent a letter with a return slip asking them to give an undertaking to enter and put in a log. And, as the closing date for the contests logs approached, Geoff phoned quite a few he had heard on air to remind them to submit logs.

Geoff Hudson says with just a little bit more effort Victoria has a very good chance of winning the RD contest for the next two years. Let's give it a real go this year and try to keep the perpetual RD trophy in Victoria.

## 5/8 WAVE

JENNIFER WARRINGTON VK5ANW

I trust that you all had a safe and enjoyable holiday season and are now back at work or study with renewed enthusiasm.

Those who missed the Christmas meeting at Woodville Community Hall missed out on a good night of fun, food and friendship. Those who worked so hard to put it all together must feel a little disheartened at the lack of attendees. The speaker, Keith Rendell, had a very dry and subtle sense of humour and gave us something to think about in his talk on "Humour is no laughing matter". Our thanks to the ladies for the excellent supper; John Butler VK5NX for organising the drinks; and the council and anyone else who helped to make it happen. I wonder why more people don't attend such a good night. Is it just that there are too many things happening at that time of the year, or is council on the wrong track putting on a night like this? Perhaps you should let them know your thoughts. The ICS award was presented to Kevin May VK5IV for his services as Broadcast Officer over the past four years, and Hon Life Membership certificates were presented to Bill Wardrop VK5AWM and myself. We were pleased to welcome visitors from VK6, Christine VK6ZLZ, Cliff VK6LZ, and son Mark Bastin. Formerly from VK5 some 10 years ago, they were back here on holiday

### Diary Dates

Sat 2 February WIA holding examinations at BGB

Tues 26 Feb WIA general meeting 7.45pm (open from 7pm for ESC, QSL Bureau, Publications etc)

Sun 24 March Barossa Picnic, Mount Pleasant Oval, 11am. (I may have to eat my words regarding last month's info on this. My latest communiqué says "sausages and bread" will be for sale, so there may not be salads for sale!)

## VK7 NOTES

TED BEARD VK7EB

### VK7 Annual General Meeting

All members please note: the Annual General Meeting of the VK7 Division shall be held at 105 New Town Rd on 28 March 1991, commencing at 2pm.

All Notices of Motion for the AGM must be received by the Secretary not less than 28 days prior to the meeting, and must be signed by at least three (3) members.

Nomination of candidates for election to council must be received by the Secretary, in writing, not less than 21 days before the AGM.

Not less than 10 days before the AGM, should an election be necessary, a ballot paper shall be posted to each member of the Institute, and is to be returned to the Secretary prior to the commencement of the AGM.

Proxies are to be deposited at the registered office of the Institute, 105 New Town Rd, Hobart at least 24 hours before the time appointed for the meeting.

All the above items are in accordance with the Articles of Association.

**E A BEARD**
**VK7 DIVISIONAL SECRETARY**

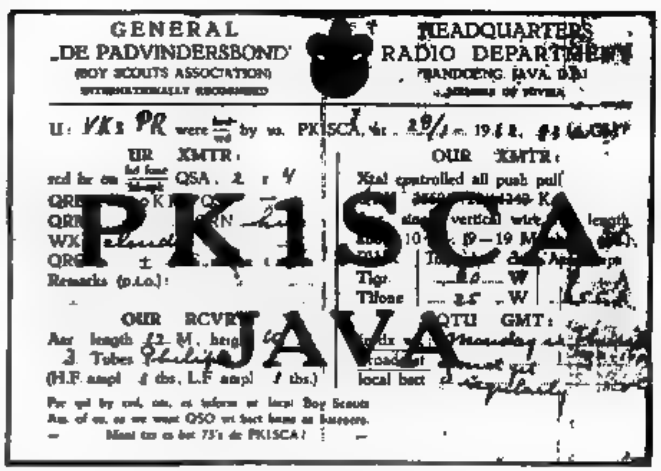
## QSLs FROM THE WIA COLLECTION (28)

KEN MATCHETT VK3TL HON CURATOR WIA QSL COLLECTION
PO BOX 1 SEVILLE VIC 3139

### The Boy Scouts Movement and Amateur Radio — Part 2

JOTA (Jamboree on the Air) is the link between the Scout Movement and Amateur Radio. Conducted in October each year, it is a means by which international understanding and goodwill can be fostered throughout the world. It is emphasised the JOTA is not in any way a competition but simply a way of bringing Scouts together through amateur radio. The event lasts 48 hours over one weekend, and a certificate from Scout HQ is sent to all those radio amateurs taking part and who notify their participation in the event. The Jamboree on the Air 1990 made use of Australia's domestic satellite, AUSSAT, for the relay of traffic across the nation on frequencies other than HF. The year 1990 saw the introduction of two new awards for those stations that took part in JOTA. These are the "Radio Scouting Award" and the "JOTA Award", details of which are to be found in the October 1990 edition of *Amateur Radio*.

Of the 100 or so countries taking part in JOTA each year, Australia is probably the most active. It was estimated that approximately 30,000 persons (including visitors to amateur stations) were involved in the 1989 JOTA and that no fewer than 683 amateur


stations reported their participation in the event to Scout HQ. Each year an official opening of JOTA is conducted through VK1BP, the Scout Association HQ station.

Although scouting started about 80 years ago, it has been only since 1958 that JOTA has become an established event. Like scouting, JOTA started in England when a group of scouts, who were also radio enthusiasts, set up a station at Sutton Park during the Ninth World Scout Jamboree. It was during May 1958 that Leslie Mitchell (an ex-ASM in America) organised the JOTA using his own call, G3BHK. Of course, before the first JOTA there had always been a strong link between Scouts and amateur radio enthusiasts. One tends nowadays to associate Scouts and amateur radio with the post-World War II years. However, ever since DX as we know it (which really assumed importance in the early, and especially, mid-1920s) there had been radio operators who shared the hobbies of radio and scouting. In the October issue of QST 1972 in the article entitled "Ham Radio — Scout Style" mention is made of the fact that as early as October 1912, the British experimental station XBS operated by Mr H R Phillips engaged in Scout activities on the air. Operation was on the old 200m band, range being about five miles. It was regularly on the air using, of course, spark transmission.

## PK1SCA

This QSL of the WIA Collection is dated January 1932. The QSL emanating from Java (a DX country in those days) was from the Boy Scouts Association of Netherlands East Indies. This association was called "General de Padvindersbond" which, when translated, means "Pathfinders' Group". The recipient was Ron Jardine (SK) VK3PR of Leongatha. At the bottom of the QSL we read, "Pse QSL by crd, om, es inform ur local Boy Scouts Ass of us, as we want QSO wi bact (bcst? = broadcast) hams es listeners".

## VK3WIA

Before the first JOTA, the Federal station, VK3WIA, undertook amateur radio operation on behalf of the Scout Movement. A special QSL was printed in 1955 on the occasion of the Pan-Pacific Scout Jamboree held at Clifford Park, Victoria during December 1955/January 1956. The Federal Committee of the WIA had received a request for the Pan-Pacific Scout Jamboree Committee to provide an amateur radio at the camp so that Scouts could not only see a station working but be able to communicate with other Scouts from all over the world. The Federal Executive offered its own station, VK3WIA. The PMG (as Telecom was then known) granted the special use of higher than normal power (500 watts); the RAAF helped along with petrol-driven alternators for the purpose; whilst an Army Signals Unit erected six directional V-beams for the station. The QSL shows the four giant boomerangs which marked the entrance to the camp. (See *Amateur Radio* October 1985, "History of Jamboree on the Air" by the late Max Hull, VK3ZS (then the Federal Historian) for fuller details.

## VS6AJ

This attractive QSL was sent from Boy Scout HQ, Hong Kong. The Scout depicted on the card epitomises the spirit behind the Scout Movement. It was a firm belief of its founder that scouting was an activity to be enjoyed and that it should entail a spontaneity from children in contrast to the routine drill-based training in education practised in BP's time. Like many other members of the British Empire, Hong Kong started scouting very early, just one year after Australia's entry into the movement. The Scout shown wears his uniform which has been adapted throughout the world to fit in with national custom. The Scout emblem on his hat is taken by many to represent a Prince of Wales feather, but is really an arrowhead which shows north on a map or compass. The symbol is related to army scouting and symbolically guides the young Scout in the right direction. The arrowhead has three points which remind the Scout of the three Scout promises (duty of God and the Queen, helping others and obeying the Scout law). The emblem is often enclosed with a ring of rope tied at the base with a reef knot (one of the simplest and most secure of knots) which is to remind the Scout of his duty to do a good turn for somebody every day.

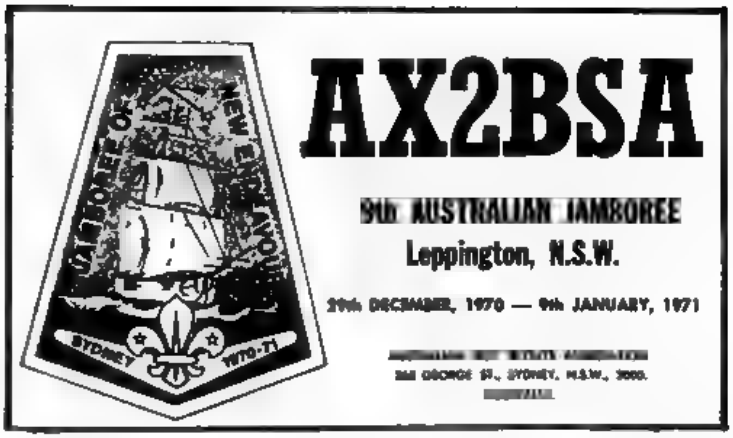
Scouting started in Australia in 1908. In fact, along with Belgium, Gibraltar, Ireland, Malta, New Zealand and South Africa, Australia was amongst the first countries to form a scout organisation. The year also marked the date of the first Scout camp (apart from the experimental camp held the previous year) conducted in Northumberland, England.

The WIA Collection contains a considerable number of especially allocated calls to Scout stations throughout the world. In the majority of cases a special callsign suffix has been granted. The QSL cards celebrate, amongst others, Scout Jamborees on the Air, World Scout Jamborees, National Jamborees and Pan-Pacific Jamborees. Amongst those in the Collection are Papua New Guinea's P29JOA (Jamboree on the Air), SK7JAM (Swedish special prefix), ZS4JAM from South Africa, Z27JAM from Zimbabwe, LX1JAM from Luxembourg, VE3WSJ (World Scout Jamboree from Canada, 9V1SJ (Scout Jamboree, from Singapore), 3B8SJ from Mauritius, OI3SUF (special prefix of the Scout Union of Finland) ZL4APJ from New Zealand's Asia-Pacific Jamboree of 1978 and ZL1PPJ (Pan-Pacific Jamboree held in Auckland in 1959) to mention just a few.

In Australia there is even a special callsign suffix allocation for both Scouts and Girl Guides. The prefix block SAA-SZZ is allocated to full licensees, but the suffixes SAA-SDZ are especially assigned to the Australian Scout Association. Likewise the GAA-GGZ prefix block has been assigned to the Girl Guides Association. The special S prefix enables Scout stations to be easily recognised and encourages Scout groups to use amateur radio as part of their activity programs.

## AX2BSA

This QSL is one of several especially assigned calls to the Australian Boy Scouts


Association. The Jamboree of New Endeavour was held in Sydney in December 1970/January '71 and was the Ninth Australian Jamboree. The event was part of the bicentenary celebrations, Captain Cook having arrived at Botany Bay in 1770 in his ship "Endeavour". The call VK1BP has been mentioned previously. It is the callsign of the Scout Association's national HQ in Canberra, ACT. The special calls VK5BP and VK8BP are held by the Scout Association's HQ in South Australia and the Northern Territory respectively, whilst calls VK2SAA, VK4SAA and VK6SAA are held in other states. There are several other calls held by Scout Associations throughout Australia. The station VK5SJW operated during the World Jamboree of 1988/89 and the particularly attractive QSL VK4SAJ resulted from the 13th Australian Scout Jamboree of December '82/January '83 held at Ipswich, Queensland. In Australia even the individual Scout stations have, in most cases, been fortunate in obtaining an identifying suffix in their callsigns.

Examples include VK2SBB (Bunbury), VK2SCH (Heathcote, NSW), VK3SAC (Caulfield), VK3SBH (Box Hill), VK4SMM (Mount Morgan), VK5SMO (Moonta), VK6SCG (Scouts, Cubs, Guides) and VK7SCM (Cradle Mountain). All these QSLs have been donated to the WIA QSL Collection.

Space will not permit a full account of other aspects of the Scout Movement depicted on the QSL cards of amateur radio. Suffice it to say that especially allocated callsigns have been claimed by related groups such as Air Scouts (eg GB0GAS = Greenwich Air Scouts), Sea Scouts (eg GB0NSS = Nelson Sea Scouts), Bold Venture Scouts (eg GB2BVS), VK2GGL (Girl Guides) and Rover Scouts (eg VK5SRM, which operated during a Ranger Moot in January 1987).

For his services to the nation, the founder of Scouting was knighted in 1909 and raised to the peerage in 1929 taking the title "Lord Baden-Powell of Gilwell". The name Gilwell is a significant one for Scouts since it was in July 1919 that one of BP's hopes was realised, namely the establishment of a permanent training centre for Scout leaders. The site, named Gilwell Park, was in Epping Forest not far from London. In the following year, Baden-Powell was named Chief Scout of the World. After having witnessed the meteoric growth of scouting throughout the world, and the realisation of his life's work, Baden-Powell retired to Nyeri, Kenya where he died at the age of 83 on 8 January 1941. ar

## CLUB CORNER

### Riverland ARC Has Busy Time

A good attendance of Riverland Amateur Radio Club members for a working bee on Sunday, 2 December was held at the 2m repeater site to clean up the area and replace the transmit and receive antennas to increase the gain by about 3.5dB.

The 100ft tower was negotiated by Steve Seidel, the only one game enough to make the trip and see the view.

On Friday, 7 December, club members and their wives enjoyed an excellent meal for a Christmas get together at the Wunkar Golden Grain Tavern. Wunkar is a small wheat-growing town (well known for its silos) situated between Loxton and Swan Reach in the Murray Mallee.

A mini bus was used to convey members and their wives from Renmark, Berri and Loxton to the tavern. Ivan VK5PAW was our driver.

Perfect weather enabled three members and their wives, Kingsley Brauer VK5NOV and Maureen, Doug Tamblyn VK5PDT and Bev, and Peter Blades VK5APB and son Matthew to enjoy a barbecue picnic at Lake Cullulleraine with members of the Sunraysia Radio Group. For most it was a meeting for the first time. It is hoped that further meetings of the clubs will be held in 1991. Other members of the Riverland Club were unable to attend the picnic owing to last-minute commitments.

Lake Cullulleraine is situated approximately 38km west of Mildura on the Sturt Highway between Mildura and Renmark.

Club members send New Year's greetings to all readers of AR.

Doug Tamblyn VK5PDT
Secretary, Riverland ARC

*Members of Riverland Amateur Radio Club working bee. Back row L to R John Crosier, Ivan Smith VK5PAW. David Wilson VK5NAP, John Ruston VK5ARK, Garry Watt VK5CWP. Front Row L to R Doug Tamblyn VK5PDT, Mike MacIntosh VK5KLG and Kingsley Brauer VK5NOU.*

## Air Forces Amateur Radio Net

At the annual meeting of the Air Forces Amateur Radio Net, Roy Mahoney VK4RAY was elected president, Bob Neville VK4KRN Hon Secretary; and Alan Cook VK3AUC Hon Treasurer. The net consists of serving and past members of Air Forces of the world resident in Australasia.

Net times: Southern group
Tuesdays 3610 +/- 1030Z *
Fridays 3605 +/- 0600Z
Northern group
Tuesdays 3567 +/- 1000Z*
* when daylight saving is in force less one hour

The Adastra Award is available to members, non-members and shortwave listeners.

Bob Neville VK4KRN,
124 Roscommon Rd,
Boondall, 4034

## The West Coast Radio Group, Tas

The west coast repeater is situated on Mt Read. Mt Read is situated to the south of Rosebery, approximately 9km as the crow flies. The height is 1,050m or 3438.75ft. The tower is 30ft and the base is about 10ft below the top of the mountain. (The tower was standing at 1950 hours on 22/2/90). This will give the repeater good coverage of the west coast and, hopefully, a large slice of Tasmania not covered by the other repeaters in the state.

The members of the west coast radio group are as follows: VK7NBU Bob, VK7KVB Dick, VK7NDH Dale, Beverly — Dale's better half, VK7PL Peter, VK7ZMR Maurice, VK7ADC Darby, VK7ZBT Greg, David Spicer and VK7BV Terry.

The repeater frequency is 147.075MHz with a + offset of 600kHz. The repeater was converted by Dick VK7KVB from a Plessey MPR43, and the final line-up was performed by Noel VK7KNS of VK Electronics in Burnie. The help given by Noel is very much appreciated by the group.

The group has also installed a UHF CB on the site; this was also converted from a commercial rig by Dick (Philips 828). This has given a few headaches due to a fault in the original set-up of the radio. This repeater will add to the coverage of the CB repeaters in Tasmania and to the safety of motorists and bush-walkers in the state. Work will continue on the site by the members on the west coast, and I am sure Dale will continue time out with his usual short overs. He was the first, and that happened at 1646 on 19/7/90. The antenna at present is not complete, and it is hoped that at some future date, if funds are available, a set of cavities will be installed. But at present that is not possible, as the separation required from the filters is greater than the normal 85dB and will cost over $3000, which is not available at present. But we may strike it lucky in the future. Several stations from across the water have made contact with members and other amateurs during the openings over the past few weeks. Others have triggered it but have not had a reply, as there are not many amateurs on the west coast. We are aware that this has happened due to the comments on other bands and repeaters, so don't give up; you will make contact in due time. If anyone requires more information, please contact one of the members of the group, and if it is about the conversion, Dick is the best one for that. We wish and all the compliments of the season, and may 1991 bring you all peace of mind and good health.

VK7BV TERRY MCMULLEN ar

# OVER TO YOU

ALL LETTERS FROM MEMBERS WILL BE CONSIDERED FOR PUBLICATION BUT MUST BE LESS THAN 300 WORDS. THE WIA ACCEPTS NO RESPONSIBILITY FOR OPINIONS EXPRESSED BY CORRESPONDENTS

It has taken me much longer than usual to read the December issue of Amateur Radio because my time has been taken up trying to work out the time from the VNG time signal transmissions. The absurdly complicated method of telling the time from VNG is spelt out in the article "VNG - HOW TO USE IT". All that is required is a PhD in mathematics, a computer, and a lot of spare time. However the article sensibly states "It is a good idea to have a timepiece which shows the correct time - so that you will have a fair idea of what the time should be when you are dividing the minute, day and hour sections, until you feel confident that you can get it right" In other words, to tell the time from VNG you need a good clock!

VNG should get off the air, or at least stop blocking WWV transmissions where they have the old fashioned method of simply telling you the precise time.

**DR S. BOCKNER VK5VN**
**ATKINSON RD**
**CRAFERS 5152**

I was not going to renew for 1991 but after seeing the article "A Japan Odyssey" I changed my mind.

Life is getting a bit too "high tech" for me nowadays. I am trying to fathom the mysteries of UNIX on my 286/12 computer, but sometimes I feel like selling all the high tech gear and going fishing.

The story in today's "Australian" about "(mixed up) materials engineering" was good reading. but your story on Japan was very good.

My thanks to Terry Robinson VK3DWZ.

**JON KITCHIN VK6TU**
**10 PHILLIP WAY**
**OSBORNE PARK 6017**

## Value of AR

In response to the request for members' opinions regarding technical articles (AR Nov '90) I humbly suggest that a major reason for Amateur Radio's existence is construction, experiment and learning. Publication of technical articles creates incentive for this as well as helping younger amateurs acquire knowledge. How can we deserve our band allocations if we become a bunch of CB type operators? I should like to see more technical articles if that were possible; and by the way congratulations to Drew Diamond for his first rate construction designs, also to those responsible for a jolly good magazine.

**MURRAY YOUNG VK4GH**
**36 RAINTREE BLVD**
**CALOUNDRA 4551**

## AR to be Study Guide?

With interest I have followed comments about articles in AR. Let's start at the beginning! To recruit new members to WIA it is imperative to start publishing articles for beginners, corresponding to the Novice exam syllabus, so that beginners such as myself benefit both by WIA membership and in the long run by using previous issues as a reference guide! Sometimes, listening to various hams, I hear gurgle-squawk-whistle-squeak etc, which makes me wonder what are their technical qualifications? I am a beginner, oscillating in my ignorance, showing capacity to learn, and yet resistance is there! That is to say, resistance by possible helpers to teach us properly from the start! I was fortunate, having been an Air Force radio storeman, to learn a few things relating to spare parts etc.

But those with no experience would need a long time to prepare for the exam! I won't do the exam until I am 100% ready for it! So I need adequate tuition and material to prepare me. Parrot learning is out! Practical use of theory and experiment is a must! Could we see soon in AR "Electrical Laws and Circuits", diagrams etc, all the way to readiness for NAOCP exam?

PLEASE!

**VICTOR ABIANAC QDF581**
**1/222 AGNES ST**
**ROCKHAMPTON 4700**

*(We agree with your description of the problem, Victor. Our problem is that someone must write the material for us to publish. Any volunteers? Ed)*

## Code Speed

Reading the December Pounding Brass Gil VK3CQ would like novice code speed increased from 5wpm to 10wpm. I am strongly opposed to this. There are too many disabled people on the bands and this would upset many of them.

When I started in 1980 as a novice I made 11,000 contacts on SSB. As I only number my 28MHz logbook I now have well over 52,000 contacts on this band.

In 1963, as a member of the Radio Society of WA, I could do 16wpm CW. In 1979, when I decided to go back to radio, I found that I could not even pass 5wpm due to disablement. I finally got my 10wpm in 1982 after a lot of help from old man Hok 9M2FR. I sat eight hours a day for many months just listening to the sound which I knew so well, but could not handle. When I finally managed the sound I could not write fast enough due to disablement. I love CW, but that does not mean that I or anybody else has the right to set a standard for CW to keep people off the band.

JOHN VOGEL VK6BA
6 BRAND ST
CLOVERDALE 6105

## Morse Code
## A Reply to VK5KIR

My article published in Pounding Brass was originally published in a club magazine in reply to a New Zealand anti-CW lobby group.

Regulations prevent people, like Ian, who suffer a disability, being handed out an AOCP over the counter for obvious reasons which do not require explanation. The ITU demands certain standards and, fortunately, it is still a basic provision that a candidate must satisfy DoTC of his or her ability before a licence is issued. People with impaired sight have to satisfy this requirement. It would be unfortunate for amateur radio if a licence was issued on the production of a medical certificate no matter what our personal compassionate thoughts may be.

Ian suggests that there are many brilliant people. No doubt they are satisfied with the standard they have reached. There are others who just don't want to make the effort and want the standards changed to suit.

As a long-standing member of the WIA and an active amateur for 52 years operating all modes, I think this qualifies me to make an assessment.

In conclusion, stick with it Ian, you have only 5wpm to go.

PETER ALEXANDER VK2PA
NANDARI
ROLLANDS PLAINS
VIA TELEGRAPH POINT 2441

## More Morse

VK3TFN, wonderful idea, re-examination of radio amateurs' Morse ability. I agree, and there will be thousands joining me. Those who fail will help populate the unused repeaters and VHF/UHF frequencies. It is obvious that Graham, like many, does not realise that Morse is a common language and, once mastered at the communication level (10wpm or better) has no restrictions, no accent. Surprisingly enough, a CW operator does not have to be conversant in Japanese and Esquimaux or any other language to world over, hence one of the many positive arguments for its retention. I will agree that many amateurs study Morse only to obtain an AOCP. Re-examination will certainly sort the men from the boys.

To deny unqualified operators access to the HF bands is neither selfish nor discriminatory (IRR 1563). An interesting point: the lobby group against Morse code seems to come from these people who have never taken time out to learn it or use it. Are they qualified to make an assessment?

The ball is in your court as it would be with many people who want to qualify for a full call.

PETER ALEXANDER VK2PA
NANDARI
ROLLANDS PLAINS
VIA TELEGRAPH POINT 2441

## Yet More Morse

It would take more than 200 words to explain to Mr Jackson VK3TFN why CW is still the number-one communication mode, and still the fastest "for all seasons". At present you have to pass the test, or else you do not get a full call. This does not make you a CW operator. You only become one of the elite band after years of practice. When you do master Morse code a whole new world of communications opens up for you, instead of just giving a contact and weather report, as is the case of a big percentage of contacts. Many more people would like to learn CW, but will not put their brains to it and learn or operate the code. Black boxes and the demise of proper written examinations have made things easy enough these days, but a CW pass is still a topic on air which gives the person concerned reason to boast and feel he is on his way to becoming a fully fledged "ham".

To Mr Ritson, AR Dec VK5KIR. Congratulations on passing the test in code — as you were required to do for an amateur licence. Now use it, stop whingeing, come down on 40MX and send some dots and dashes and feel you are doing some real hamming(!!!) with Peter and myself.

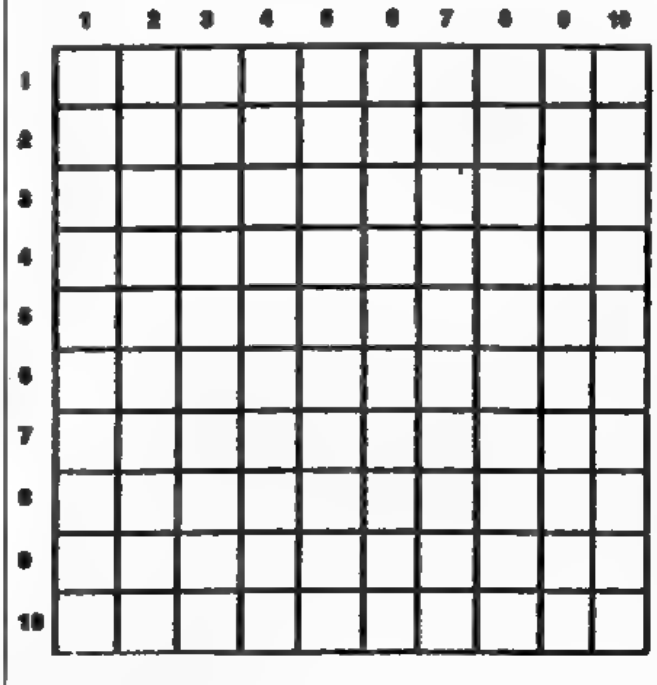
G W LANYON VK2AGL
16 HILTON AVE
ROSELANDS 2196

*(K CALLS CAN'T USE 40 METRES!!! ED)*

## More Morse Again!

Graham Jackson VK3TFN puts forward the same fallacious arguments as the rest of

## Morseword No 47



Across
1 Aching
2 Fastener
3 Begin
4 Seep Out
5 Silly
6 Inlet
7 Spouse
8 He goes to court
9 Sins
10 Staya flat

Down
1 Taxes
2 Stadium
3 Ramble
4 Greek letter
5 Platform
6 Emperor
7 Urn
8 N.S.W. inland town
9 Genuine
10 Atoms

Audrey Ryan © 1990

*Solution Page 56*

the anti-CW lobby.

His inane statement that CW is not now an essential part of amateur radio is not borne out by the facts. He should monitor all amateur bands, do an honest count of amateur contacts worldwide and he will find that some 60 per cent are conducted in Morse code. The reasons for this are:

a) language difficulties where speech is concerned,
b) the high cost of equipment in less affluent countries has led to simple solid-state CW rigs;
c) the often proven fact of the superior performance of CW under poor conditions;
d) the ability to copy distress calls in Morse should be essential for all radio operators.

His ridiculous statement concerning foreign languages and distress signals is evidence that Graham should be re-examined for his lack of knowledge of distress regulations.

'Mayday' (M'aidez), 'securite' and 'Q code' signals are international and understood in all languages. I have taught handicapped persons Morse and many have attained unrestricted qualifications.

Less whingeing, more effort, plus good instruction will bring qualifications which make the complete amateur radio operator.

Even astronauts and aircraft pilots must learn Morse.

**TED GABRIEL VK4YG**
**PO Box 245**
**RAVENSHOE 4872**

# SILENT KEYS

DUE TO INCREASING SPACE DEMANDS OBITUARIES MUST BE NO LONGER THAN 200 WORDS

We regret to announce the recent passing of:

| | |
|---|---|
| Mr L A Lawson | VK2IX |
| Mr Dennis King | VK2ZM |
| Mr Joe Baker | VK2BJX |
| Mr Ron Higginbotham | VK3RN |
| Mr J P Wain | VK3BJO |
| Mr Ian Morris | VK3ELS |
| Mr T K Long | VK3ZFL |
| Mr Andy Thompson | VK4AT |
| Mr Les Eliason | VK4EH (ex 3ALE) |
| Mr R F Crowell | VK6LY |
| Mr J M Denny | VK6YD |
| Mr M J (Barney) Watson | VK7BA |

## A J C Thompson (Andy) VK4AT

I sadly report the passing of Andy VK4AT on 24 November 1990 at the Logan Nursing Home, Brisbane. Andy was 93 years old and died peacefully in his sleep. Until his retirement Andy was a dairy farmer in the Pomona district, and later at Gympie. He was a great experimenter in the antenna field and, on his retirement, lived with his daughter, Nancy, at Loganlea, Logan City. Andy served in the army in World War One. Sadly missed by all his mates and family.

**F T LUBACH VK4RF**

## Dennis King VK2ZM

Dennis passed away on 14 December 1990 in Orange Hospital after a short illness. He was 73 years old.

Dennis made it to the top in three careers — music, newspapers and theatre. First and foremost he was a musician, a banjo and guitar player second to none, playing at the Sydney Trocadero, on the Colgate Coast-to-Coast Radio Show and with the ABC Show Band.

At mid-life he entered the newspaper business, managing the Blacktown Advocate, and then theatres, becoming the Sydney Area Manager for Greater Union.

He held an interest in radio for many years, joining the WIA in 1975. His earlier callsigns were VK2NNJ and VK2AOO.

Dennis retired to Gunderman on the Hawkesbury, then shifted to Blayney, Orange and Blackheath, and then finally was attracted back to Orange to end his days.

He leaves behind Lola, his wife of 41 years, and will be sadly missed by all who knew him on the air. But to many Dennis will be remembered as "Master of the Guitar, King of the Trocadero".

**WESTLAKES AMATEUR RADIO CLUB**

## L B (Jock) Fisher VK1LF

"Jock" died from cancer on 16 September 1990, aged 74 years.

He came to Australia from Scotland in 1945 and served in various government departments, specialising in naval electrical engineering. He retired from the Navy Department in 1977.

Jock was an active radio amateur, holding licences in UK and Australia. In addition to his amateur activities he restored old radio sets. He was a director of the Canberra Burns Club, a member of the Lions Club and of the Committee of the Goodwin Retirement Village, where he lived.

For many years, Jock played a significant part in the JOTA days at Government House, Canberra.

**73 OM, FRANK DOHERTY VK1XE**

# Roar Hopes To Expand

ONE OF FIRST WORLDWIDE fellowships of Rotary International is ROAR - Rotarians of Amateur Radio. An article by David Portley VK4DP in "Rotary Down Under" matazine says efforts are being made to expand ROAR in the South Pacific - Australia and New Zealand in particular.

Members of many Rotary clubs are already involved in the Australian section of ROAR. These include those at Port Pirie and Murray Bridge (SA) Keilor,k Ringwood, Balwyn and Bendigo (Vic), Wanneroo (WA), Rockhampton South (Qld), Launceston North (Tas), and in NSW - Newcastle, Wagga Wagga, and Albury.

ROAR "Down Under" runs a net on 14.293 MHz at 1000 UTC on the first Sunday of every month and invites fellow rotarians to join in.

# HF PREDICTIONS

ROGER HARRISON VK2ZTB
THE APOGEE GROUP

## February Charts

For ease of use and to accommodate space restrictions in the magazine, I have provided predictions applicable for three major regions of Australia:

**VK EAST** Covers the major part of NSW and Queensland.

**VK SOUTH**. Covers southern-NSW, VK3, VK5 and VK7.

**VK WEST**. Covers the south-west of West Australia.

For each of these regions I have selected six "terminals" to major continental regions of the world. To Europe, long path predictions are given in lieu of the short path, as the former is open at more reasonable hours.

The charts explained

These charts are different to those you see published elsewhere, and arguably more useful to the amateur fraternity as they give, effectively, the predicted signal/noise ratio for each hour and for selected bands.

The charts are organised in 24 rows, one for each hour UTC (first column on the left). Don't forget to add the appropriate number of hours for your time zone, including daylight saving where it applies. The next column gives the MUF (maximum usable frequency) for each hour, followed by the field strength at the MUF, in decibels referred to 1 uV/metre (dBU). The column marked FOT gives the "optimum" frequency - the most reliable frequency for the path.

Then come five columns, one for each of five selected HF bands.

The numbers in the column represent predicted field strength at each hour in decibels referred to 1 uV/metre. Here it represents "raw" signal to noise ratio as urban noise levels are typically 1-2 uV/metre, but does not take into account the advantage offered by particular transmission modes. The results are based on a transmitter power of 100 W output (except where noted later), the use of modest 3-element beams or similar, and for "median" conditions. Where the results fall below -40 dB, no output is printed.

Enhanced conditions may improve S/N ratios by 9-15 dB. The use of CW or digital transmission modes show better results than SSB. If you've got 400 W output, you get a 6 dB improvements. Where conditions warrant it, I have include predictions for the bands below 14 MHz, deleting the upper bands.

## Ten Metres

The predictions look a little pessimistic for ten metres, but it only takes a slight "lift" in conditions to provide openings on this band. Keep a watch on the short-term geomagnetic and propagation forecasts, which are broadcast by WWV and Radio Australia, or obtainable from the IPS recorded message service on (02) 414-8330.

## Broadcasts

The VK2WI and VK3WI Sunday broadcasts carry propagation predictions; for the bands 14 MHz and above listen on the last Sunday of the month for the month ahead, and for the bands 1.8 to 10 MHz, listen on the first Sunday of the month for that month. Often, special predictions covering current or upcoming DXpeditions will be included, so keep a listen out.

### VK EAST - MEDITERRANEAN

| UTC | MUF | DBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 14.9 | -16 | 11.3 | -18 | -11 | -12 | -19 | -26 |
| 2 | 13.8 | -29 | 9.8 | -22 | -15 | -14 | -23 | -34 |
| 3 | 12.4 | -36 | 9.5 | -25 | -16 | -17 | -23 | -32 |
| 4 | 15.7 | -26 | 12.2 | -34 | -19 | -15 | -16 | -22 |
| 5 | 21.9 | -14 | 16.9 | ... | -23 | -15 | -11 | -12 |
| 6 | 26.3 | -7 | 21.7 | ... | -28 | -16 | -9 | -7 |
| 7 | 31.3 | -4 | 24.1 | ... | -29 | -16 | -8 | -4 |
| 8 | 30.2 | -3 | 24.4 | ... | -26 | -14 | -7 | -3 |
| 9 | 28.9 | -2 | 23.4 | ... | -20 | -10 | -4 | -2 |
| 10 | 27.4 | -1 | 22.1 | -33 | -12 | -5 | -1 | -1 |
| 11 | 25.9 | 2 | 20.8 | -19 | -4 | 1 | 3 | 0 |
| 12 | 24.5 | 5 | 19.6 | -5 | 4 | 6 | 4 | 1 |
| 13 | 23.9 | 8 | 19.0 | 7 | 11 | 10 | 7 | 2 |
| 14 | 23.2 | 11 | 18.4 | 16 | 16 | 13 | 8 | 2 |
| 15 | 22.4 | 13 | 17.6 | 22 | 19 | 15 | 8 | 1 |
| 16 | 21.2 | 14 | 16.5 | 23 | 19 | 14 | 6 | -2 |
| 17 | 20.1 | 15 | 15.6 | 24 | 18 | 12 | +4 | -6 |
| 18 | 18.8 | 15 | 14.5 | 23 | 17 | 10 | 0 | -11 |
| 19 | 17.8 | 16 | 13.6 | 22 | 15 | 7 | -2 | -15 |
| 20 | 18.2 | 16 | 13.8 | 23 | 16 | 9 | -2 | -16 |
| 21 | 20.8 | 12 | 15.6 | 20 | 16 | 11 | 3 | -7 |
| 22 | 19.2 | 8 | 14.5 | 10 | 9 | 5 | -3 | -12 |
| 23 | 17.9 | 2 | 13.5 | 0 | 2 | -1 | -8 | -18 |
| 24 | 16 8 | -5 | 12 6 | -10 | -5 | -7 | -13 | -22 |

### VK STH - MEDITERRANEAN

| UTC | [illegible] | DBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 16.1 | -9 | 12.2 | -13 | -7 | -9 | -16 | -26 |
| 2 | 13.6 | -22 | 10.4 | -20 | -14 | -16 | -23 | -34 |
| 3 | 12.9 | -31 | 9.9 | -24 | -16 | -17 | -23 | -33 |
| 4 | 16.5 | -22 | 12.8 | -33 | -18 | -14 | -16 | -21 |
| 5 | 23.2 | -11 | 17.9 | ... | -21 | -14 | -10 | -11 |
| 6 | 28.7 | -6 | 23.0 | ... | -29 | -16 | -9 | -6 |
| 7 | 30.6 | -7 | 22.3 | ... | -30 | -17 | -9 | -7 |
| 8 | 28.1 | -7 | 22.9 | ... | -29 | -16 | -9 | -7 |
| 9 | 27.1 | -6 | 22.2 | ... | -25 | -14 | -8 | -6 |
| 10 | 26.0 | -5 | 21.0 | ... | -19 | -10 | -6 | -5 |
| 11 | 24.3 | -4 | 19.6 | -30 | -12 | -6 | -4 | -5 |
| 12 | 22.5 | -2 | 18.0 | -17 | -5 | -2 | -3 | -6 |
| 13 | 20.6 | 2 | 16.5 | -3 | 2 | 2 | -3 | -9 |
| 14 | 19.4 | 7 | 15.4 | 9 | 8 | 4 | -3 | -12 |
| 15 | 18.3 | 11 | 14.5 | 18 | 12 | 5 | -5 | -17 |
| 16 | 17.4 | 13 | 13.7 | 18 | 11 | 3 | -8 | -21 |
| 17 | 16.8 | 13 | 13.1 | 19 | 10 | 2 | -11 | -25 |
| 18 | 16.0 | 14 | 12.3 | 18 | 9 | -1 | -15 | -30 |
| 19 | 15.4 | 14 | 11.7 | 17 | 7 | -4 | -18 | -35 |
| 20 | 15.0 | 14 | 11.3 | 16 | 5 | -5 | -21 | -38 |
| 21 | 16.0 | 13 | 11.9 | 16 | 8 | -2 | -15 | -30 |
| 22 | 18.3 | 10 | 13.5 | 14 | 10 | 4 | -6 | -17 |
| 23 | 20.2 | 6 | 15.1 | 8 | 8 | 5 | -2 | -11 |
| 24 | 18.4 | 0 | 13.8 | -4 | 0 | -3 | -9 | -18 |

### VK WEST - MEDITERRANEAN

| UTC | MUF | DBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 16.6 | 0 | 12.6 | -1 | -2 | -7 | -16 | -28 |
| 2 | 13.9 | -13 | 10.7 | -12 | -11 | -16 | -26 | -39 |
| 3 | 13.2 | -23 | 10.2 | -19 | -15 | -18 | -27 | -40 |
| 4 | 16.9 | -17 | 13.1 | -24 | -15 | -13 | -16 | -23 |
| 5 | 23.9 | -8 | 18.4 | -38 | -17 | -10 | -8 | -10 |
| 6 | 30.8 | -4 | 23.6 | ... | -22 | -12 | -6 | -4 |
| 7 | 31.6 | -3 | 24.9 | ... | -25 | -13 | -6 | -3 |
| 8 | 31.3 | -3 | 24.5 | ... | -25 | -13 | -6 | -3 |
| 9 | 30.7 | -3 | 24.7 | ... | -23 | -12 | -6 | -3 |
| 10 | 29.6 | -3 | 24.1 | ... | -19 | -10 | -4 | -2 |
| 11 | 28 3 | -1 | 23.4 | -34 | -11 | -5 | -2 | -1 |
| 12 | 26.7 | 1 | 21.5 | -19 | -4 | 1 | 2 | 0 |
| 13 | 25.1 | 4 | 20.2 | -3 | 5 | 6 | 4 | 0 |
| 14 | 23.6 | 8 | 18.8 | 11 | 12 | 11 | 6 | 0 |
| 15 | 22.8 | 11 | 18.1 | 21 | 18 | 14 | 7 | 0 |
| 16 | 22.1 | 13 | 17.5 | 23 | 19 | 14 | 6 | -2 |
| 17 | 21.3 | 13 | 17.1 | 24 | 19 | 13 | 5 | -4 |
| 18 | 20.3 | 13 | 15.8 | 24 | 18 | 11 | 2 | -8 |
| 19 | 18.3 | 14 | 15.0 | 23 | 16 | 9 | -1 | -12 |
| 20 | 18.2 | 14 | 14.0 | 22 | 14 | 6 | -5 | -17 |
| 21 | 17 4 | 14 | 13.2 | 20 | 12 | 4 | -8 | -22 |
| 22 | 18.0 | 14 | 13.6 | 21 | 14 | 6 | -6 | -18 |
| 23 | 20.6 | 11 | 15.7 | 21 | 16 | 10 | 1 | -9 |
| 24 | 19.0 | 6 | 14.3 | 10 | 7 | 2 | -6 | -17 |

### VK EAST - EUROPE L.P.

| UTC | MUF | DBU | FOT | 14.2 | 18.1 | 21.2 | 24 9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.8 | -26 | 9.7 | -20 | -14 | -16 | -22 | -32 |
| 2 | 12.8 | -22 | 9.7 | -17 | -13 | -16 | -24 | -35 |
| 3 | 12.7 | -17 | 9.8 | -13 | -12 | -16 | -25 | -38 |
| 4 | 12.0 | -14 | 9.3 | -10 | -12 | -29 | -31 | ... |
| 5 | 11.1 | -12 | 8.6 | -8 | -14 | -23 | -38 | ... |
| 6 | 11.3 | -4 | 8.9 | -4 | -13 | -23 | -40 | ... |
| 7 | 13.4 | 5 | 10.7 | 4 | -4 | -13 | -28 | ... |
| 8 | 17.6 | 8 | 14.0 | 12 | 7 | 1 | -9 | -21 |
| 9 | 20.2 | 8 | 15.4 | 9 | 10 | 7 | 2 | -5 |
| 10 | 19.3 | 1 | 14.6 | -6 | 0 | 0 | -3 | -9 |
| 11 | 19.6 | -7 | 15.6 | -20 | -9 | -6 | -8 | -12 |
| 12 | 18.5 | -14 | 14.7 | -31 | -15 | -11 | -11 | -15 |
| 13 | 17.6 | -21 | 14 2 | -38 | -20 | -14 | -13 | -16 |
| 14 | 16.9 | -26 | 13.2 | ... | -22 | -16 | -14 | -17 |
| 15 | 16.1 | -31 | 12.4 | ... | -23 | -17 | -15 | -18 |
| 16 | 15.3 | -36 | 11.7 | .. | -23 | -17 | -15 | -18 |
| 17 | 15.0 | -37 | 11 3 | . . | -23 | -17 | -16 | -18 |
| 18 | 15.9 | -34 | 11.8 | ... | -24 | -17 | -15 | -17 |
| 19 | 18.2 | -25 | 14 4 | ... | -26 | -18 | -14 | -15 |
| 20 | 21.4 | -17 | 16 6 | . . | -27 | -18 | -13 | -13 |
| 21 | 18.5 | -21 | 14.3 | . . | -22 | -16 | -14 | -16 |
| 22 | 16 0 | -25 | 12.3 | -34 | -18 | -15 | -15 | -20 |
| 23 | 14.3 | 27 | 10.9 | -28 | -16 | -15 | -18 | 24 |
| 24 | 13.3 | -28 | 10 1 | -23 | -15 | -15 | -20 | -29 |

### VK STH - EUROPE L.P.

| UTC | MUF | DBU | FOT | 14.2 | 18.1 | 21.2 | 24 9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.5 | -27 | 9.5 | -20 | -15 | -17 | -24 | -35 |
| 2 | 12.5 | -23 | 9.6 | -17 | -14 | -18 | -26 | -39 |
| 3 | 12.4 | -19 | 9.6 | -13 | -13 | -18 | -29 | ... |
| 4 | 11.6 | -15 | 9.1 | -11 | -14 | -22 | -35 | ... |
| 5 | 10.8 | -12 | 8.4 | -9 | -17 | -28 | ... | ... |
| 6 | 10.9 | -6 | 8.6 | -7 | -16 | -29 | ... | ... |
| 7 | 12.7 | 4 | 10.1 | 2 | -8 | -19 | -36 | ... |
| 8 | 16.2 | 7 | 12.9 | 10 | 3 | -4 | -16 | -30 |
| 9 | 20.4 | 7 | 15.0 | 13 | 11 | 6 | -2 | -11 |
| 10 | 19.6 | 5 | 13.7 | 5 | 6 | 3 | -3 | -11 |
| 11 | 17.4 | -1 | 12.7 | -5 | -1 | -3 | -8 | -16 |
| 12 | 17.1 | -9 | 11.8 | -16 | -8 | -8 | -12 | -20 |
| 13 | 16.1 | -18 | 11.4 | -26 | -14 | -12 | -15 | -21 |
| 14 | 15.5 | -26 | 10.7 | -32 | -18 | -14 | -16 | -21 |
| 15 | 14.6 | -32 | 10.2 | -35 | -19 | -15 | -16 | -21 |
| 16 | 14.1 | -37 | 9.9 | -37 | -20 | -16 | -16 | -21 |
| 17 | 13.9 | ... | 9 8 | ... | -25 | -20 | -21 | -25 |
| 18 | 14.8 | -37 | 10.5 | ... | -22 | 17 | -16 | -19 |
| 19 | 16.8 | -30 | 11.6 | ... | -24 | -17 | -15 | -17 |
| 20 | 19.9 | -21 | 14.2 | ... | -27 | -18 | -14 | -14 |
| 21 | 17.5 | -25 | 13.7 | ... | -23 | 16 | -15 | -17 |
| 22 | 15 2 | 29 | 11.8 | -35 | -19 | -15 | -16 | -21 |
| 23 | 13.8 | -31 | 10.6 | -29 | -17 | -15 | -18 | -25 |
| 24 | 12.8 | -31 | 9.8 | -24 | -15 | -16 | -21 | -30 |

### VK WEST - EUROPE L.P.

| UTC | MUF | DBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28 5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.3 | -39 | 9.4 | -27 | -18 | -18 | -23 | -31 |
| 2 | 12 3 | -35 | 9.5 | -25 | -18 | -19 | -25 | -34 |
| 3 | 12.1 | -31 | 9 4 | -22 | -17 | -20 | -27 | -38 |
| 4 | 11.5 | -30 | 8.9 | -19 | -17 | -22 | -31 | ... |
| 5 | 10.6 | -29 | 8 3 | -17 | -18 | -25 | -38 | ... |
| 6 | 10.7 | -23 | 8.4 | -15 | -18 | -27 | +40 | . |
| 7 | 12 4 | -12 | 9.8 | -10 | -14 | -21 | +34 | . |
| 8 | 15.6 | -4 | 12.4 | -4 | -6 | +11 | -20 | -32 |
| 9 | 19.5 | 0 | 15 6 | 1 | 2 | -2 | -8 | -17 |
| 10 | 22 3 | 3 | 17.3 | 3 | 6 | 4 | 0 | -6 |
| 11 | 18.4 | -2 | 14.2 | -4 | -1 | -3 | -8 | -15 |
| 12 | 17.1 | -8 | 13.1 | -14 | -7 | -8 | -12 | -19 |
| 13 | 18.2 | -13 | 14.5 | -25 | 14 | 11 | -13 | -,8 |
| 14 | 17.1 | -22 | 13 5 | -34 | -19 | -15 | -16 | -20 |
| 15 | 16.2 | -29 | 13 0 | -39 | -22 | -17 | -17 | -21 |
| 16 | 15 5 | -34 | 12.. | ... | -24 | -18 | -18 | -21 |
| 17 | 14.7 | -39 | 11 3 | ... | -24 | -19 | -18 | -22 |
| 18 | 14.2 | . . | 10.8 | ... | -27 | -22 | -21 | -25 |
| 19 | 13.9 | ... | 10 4 | . | +29 | 24 | -24 | -28 |
| 20 | 14.8 | 39 | 11 0 | ... | -24 | -19 | -18 | -21 |
| 21 | 16.8 | -31 | 13.2 | ... | -26 | -20 | -18 | -20 |
| 22 | 14.9 | -36 | 11 6 | 40 | -23 | 18 | -18 | -22 |
| 23 | 13 5 | . | 10.4 | -39 | -24 | -21 | -23 | -29 |
| 24 | 12.5 | ... | 9 7 | -35 | 23 | -21 | -25 | -32 |

APOGEE ARTS

| UTC | MUF | OBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 17.1 | -8 | 11.9 | -13 | -7 | -8 | -23 | -22 |
| 2 | 19.3 | -7 | 14.2 | -20 | -8 | -6 | -8 | -13 |
| 3 | 19.1 | -11 | 14.5 | -27 | -12 | -9 | -9 | -13 |
| 4 | 21.7 | -9 | 16.3 | -36 | -16 | -10 | -8 | -9 |
| 5 | 26.5 | -6 | 18.6 | ... | -19 | -11 | -7 | -7 |
| 6 | 27.2 | -6 | 19.0 | ... | -21 | -12 | -9 | -6 |
| 7 | 27.2 | -6 | 19.1 | ... | -21 | -12 | -7 | -6 |
| 8 | 27.3 | -6 | 19.1 | ... | -19 | -11 | -6 | -6 |
| 9 | 26.0 | -5 | 19 0 | -36 | -15 | -8 | -5 | -6 |
| 10 | 24 3 | -4 | 18 0 | -28 | -11 | -6 | -4 | -6 |
| 11 | 22 5 | -4 | 18 0 | -20 | -7 | -4 | -4 | -8 |
| 12 | 20 7 | -2 | 16 5 | -12 | -3 | -2 | -5 | -11 |
| 13 | 19 5 | 0 | 15 4 | -5 | 0 | -1 | -6 | -13 |
| 14 | 18 4 | 4 | 14 5 | 3 | 4 | 1 | -7 | -16 |
| 15 | 17 5 | 8 | 13 8 | 11 | 7 | 2 | -8 | -19 |
| 16 | 16 8 | 11 | 13 1 | 15 | 9 | 1 | -10 | -23 |
| 17 | 16.0 | 13 | 12.3 | 16 | 8 | 0 | -13 | -27 |
| 18 | 15 3 | 14 | 11 7 | 16 | 7 | -2 | -16 | -32 |
| 19 | 15.0 | 15 | 11.2 | 17 | 7 | -4 | -18 | -34 |
| 20 | 15 7 | 14 | 10.8 | 18 | 8 | -2 | -15 | -31 |
| 21 | 14.9 | 10 | 10.2 | 11 | 3 | -6 | -20 | -35 |
| 22 | 14 4 | 3 | 9.9 | 3 | -2 | -10 | -22 | -37 |
| 23 | 14 1 | -3 | 9 8 | -3 | -5 | -12 | -23 | -37 |
| 24 | 15 0 | -7 | 10.5 | -8 | 6 | -10 | -19 | -30 |

## VK EAST - AFRICA

| UTC | MUF | OBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 16.2 | -5 | 11.2 | -8 | -6 | -9 | -17 | -28 |
| 2 | 18.6 | -4 | 13.7 | -12 | -5 | -5 | -9 | -17 |
| 3 | 18.4 | -8 | 13.9 | -19 | -9 | -7 | -10 | -15 |
| 4 | 20.9 | -8 | 15.7 | -27 | -12 | -8 | -7 | -11 |
| 5 | 24.9 | -6 | 17.8 | -34 | -15 | -8 | -6 | -8 |
| 6 | 25.2 | -7 | 17.9 | -37 | -16 | -9 | -7 | -8 |
| 7 | 25.0 | -7 | 17.7 | -38 | -17 | -10 | -7 | -8 |
| 8 | 24.7 | -7 | 17.5 | -36 | -16 | -10 | -7 | -8 |
| 9 | 23.7 | -7 | 16.9 | -33 | -15 | -9 | -7 | -9 |
| 10 | 22.3 | -7 | 15.7 | -26 | -11 | -7 | -7 | -11 |
| 11 | 20.5 | -7 | 14.4 | -20 | -8 | -6 | -9 | -14 |
| 12 | 18.8 | -6 | 13.1 | -14 | -6 | -6 | -11 | -18 |
| 13 | 17.4 | -4 | 12.1 | -7 | -4 | -7 | -13 | -23 |
| 14 | 16.2 | 0 | 11.2 | -1 | -2 | -7 | -17 | -29 |
| 15 | 15.3 | 5 | 10.8 | 6 | 0 | -8 | -21 | -36 |
| 16 | 16.7 | 9 | 10.2 | 10 | 1 | -9 | -24 | ... |
| 17 | 13.8 | 11 | 9.6 | 10 | -1 | -13 | -30 | ... |
| 18 | 13.5 | 12 | 9.5 | 11 | -2 | -15 | -33 | ... |
| 19 | 13.3 | 13 | 9.3 | 11 | -3 | -16 | -35 | ... |
| 20 | 14.2 | 14 | 10.0 | 13 | 1 | -11 | -28 | ... |
| 21 | 14.1 | 12 | 9.8 | 11 | 0 | -11 | -28 | ... |
| 22 | 13.7 | 6 | 9.6 | 5 | -4 | -14 | -30 | ... |
| 23 | 13.4 | 0 | 9.5 | -1 | -7 | -16 | -30 | ... |
| 24 | 14 4 | -4 | 10.2 | -4 | 6 | -13 | -25 | -39 |

## VK STH - AFRICA

| UTC | MUF | OBU | FOT | 14 2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 17.1 | 4 | 12.8 | 4 | 3 | -2 | -10 | -21 |
| 2 | 19.4 | 2 | 14.7 | -2 | 2 | 0 | -5 | -12 |
| 3 | 22.0 | 1 | 17.3 | -10 | -1 | 1 | -1 | -6 |
| 4 | 27.1 | 1 | 20.7 | -20 | -5 | 0 | 2 | 0 |
| 5 | 29.3 | -1 | 23.7 | -27 | -9 | -2 | 0 | 0 |
| 6 | 29.3 | -2 | 24.1 | -32 | -12 | -4 | -1 | -1 |
| 7 | 28.9 | -2 | 23.7 | -34 | -13 | -5 | -2 | -2 |
| 8 | 28.8 | -2 | 23.5 | -34 | -13 | -5 | 2 | -2 |
| 9 | 28.3 | -2 | 23.0 | -32 | -12 | -5 | -2 | -2 |
| 10 | 27.5 | -2 | 22.3 | -27 | -10 | -3 | -1 | -2 |
| 11 | 26.2 | -1 | 21.6 | -20 | -6 | -1 | 0 | -3 |
| 12 | 24.5 | 0 | 19.7 | -11 | -1 | 1 | 0 | -4 |
| 13 | 22.6 | 3 | 18.1 | -2 | 4 | 4 | 0 | -6 |
| 14 | 20.8 | 6 | 16.6 | 7 | 8 | 5 | -1 | -9 |
| 15 | 19.6 | 9 | 15 5 | 15 | 11 | 6 | -2 | -13 |
| 16 | 18.5 | 12 | 14.6 | 19 | 13 | 6 | -5 | -16 |
| 17 | 17.6 | 13 | 14.2 | 19 | 12 | 4 | -7 | -20 |
| 18 | 17.0 | 14 | 13.2 | 20 | 11 | 2 | -10 | -24 |
| 19 | 16.2 | 15 | 12.5 | 19 | 10 | 0 | -13 | -28 |
| 20 | 15.5 | 15 | 11.9 | 18 | 8 | -2 | -17 | -33 |
| 21 | 15.2 | 15 | 11.5 | 18 | 7 | -4 | -18 | -35 |
| 22 | 16.2 | 15 | 12.1 | 19 | 10 | 0 | -13 | -29 |
| 23 | 16.6 | 13 | 12 7 | 18 | 10 | 2 | -10 | -24 |
| 24 | 16.2 | 8 | 12.3 | 10 | 5 | -2 | -13 | -26 |

## VK WEST - AFRICA

| UTC | MUF | OBU | FOT | 14.2 | 18 1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 28.6 | 3 | 21.5 | -17 | -2 | 3 | 6 | 3 |
| 2 | 29.3 | 3 | 22.2 | -20 | -3 | 2 | 4 | 3 |
| 3 | 29.8 | 3 | 24.7 | -20 | -3 | 2 | 5 | 4 |
| 4 | 29.6 | 3 | 24.4 | -19 | -3 | 3 | 5 | 4 |
| 5 | 29.3 | 3 | 24.0 | -16 | -1 | 4 | 5 | 4 |
| 6 | 28.6 | 4 | 23.4 | -12 | 1 | 6 | 5 | 4 |
| 7 | 27.6 | 5 | 22.5 | -5 | 5 | 8 | 7 | 4 |
| 8 | 26.5 | 7 | 22.1 | 6 | [illegible] | 12 | 9 | 4 |
| 9 | 25.4 | 10 | 20.5 | 19 | 19 | 16 | 11 | 4 |
| 10 | 24.3 | 11 | 19.5 | 23 | 20 | 16 | 10 | 2 |
| 11 | 23.3 | 12 | 18.6 | [illegible] | 20 | 16 | 8 | -1 |
| 12 | 22.8 | 12 | 18.2 | 26 | 21 | 16 | 8 | -2 |
| 13 | 22.4 | 13 | 17.8 | 28 | 22 | 16 | 7 | -3 |
| 14 | 21 6 | 13 | 17.6 | 27 | 21 | 14 | 4 | -6 |
| 15 | 20.2 | 13 | 15.8 | 26 | 18 | 10 | 0 | -13 |
| 16 | 19.1 | 13 | 14.8 | 24 | 15 | 7 | -5 | -19 |
| 17 | 17.7 | 13 | 13.7 | 22 | 12 | 2 | -12 | -27 |
| 18 | 16.5 | 13 | 12.7 | 19 | 8 | -4 | -19 | -37 |
| 19 | 16.5 | 13 | 12.4 | 19 | 8 | -4 | -19 | -37 |
| 20 | 15.3 | 11 | 11.9 | 14 | 1 | -12 | -31 | ... |
| 21 | 18.5 | 6 | 14.0 | 12 | 7 | 0 | -11 | -25 |
| 22 | 25.7 | 5 | 19.9 | 1 | 9 | 9 | 6 | 0 |
| 23 | 27 6 | 4 | 21.9 | -7 | 4 | 7 | 6 | 3 |
| 24 | 27 9 | 3 | 22.5 | -13 | 0 | 4 | 5 | 3 |

## VK EAST - ASIA

| UTC | MUF | OBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 26.0 | 4 | 21.0 | -1 | 7 | 8 | 5 | 1 |
| 2 | 25.9 | 4 | 21.4 | 0 | 7 | 8 | 6 | 1 |
| 3 | 25.9 | 5 | 21.3 | 1 | 8 | 9 | 6 | 1 |
| 4 | 25.6 | 5 | 20.9 | 4 | 10 | 10 | 6 | 1 |
| 5 | 25.4 | 6 | 20.8 | 8 | 12 | 11 | 7 | 1 |
| 6 | 25.0 | 8 | 20 3 | 14 | 15 | 13 | 8 | 1 |
| 7 | 24.3 | 10 | 19.7 | 22 | 20 | 16 | 9 | 1 |
| 8 | 23.1 | 13 | 18 7 | 28 | 23 | 17 | 8 | -2 |
| 9 | 21.6 | 13 | 17.4 | 28 | 21 | 14 | 4 | -7 |
| 10 | 20.0 | 14 | 16 1 | 27 | 19 | 11 | -1 | -14 |
| 11 | 18.4 | 15 | 14.7 | 25 | 16 | 6 | -7 | -22 |
| 12 | 17.4 | 15 | 13.8 | 24 | 13 | 3 | -12 | -28 |
| 13 | 16.5 | 15 | 13 1 | 22 | 10 | -1 | -17 | -35 |
| 14 | 15.7 | 16 | 12.4 | 20 | 8 | -5 | -22 | ... |
| 15 | 15.1 | 16 | 11.8 | 19 | 5 | -8 | -26 | ... |
| 16 | 14.6 | 16 | 11.1 | 17 | 2 | -12 | -31 | ... |
| 17 | 13.7 | 16 | 10.5 | 15 | -1 | -16 | -37 | ... |
| 18 | 13.4 | 15 | 10.1 | 12 | -3 | -18 | -40 | ... |
| 19 | 14.2 | 7 | 10.6 | 7 | -3 | -14 | -32 | ... |
| 20 | 16.2 | 3 | 12.0 | 4 | 1 | -7 | -19 | -34 |
| 21 | 19.7 | 3 | 14.8 | 3 | 5 | 1 | -6 | -17 |
| 22 | 22.9 | 4 | 17.4 | 2 | 7 | 6 | 1 | -7 |
| 23 | 24.7 | 4 | 19.2 | 0 | 7 | 7 | 4 | -2 |
| 24 | 25.4 | 4 | 20.2 | -1 | 7 | 7 | 5 | -1 |

## VK STH - ASIA

| UTC | MUF | OBU | FOT | 14 2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 25.8 | -1 | 20 5 | -19 | -5 | -1 | -1 | -4 |
| 2 | 26.3 | -1 | 21.3 | -19 | -5 | -1 | 0 | -3 |
| 3 | 26.3 | -1 | 19.6 | -18 | -4 | 0 | 0 | -3 |
| 4 | 26.3 | 0 | 21.6 | -16 | -3 | 1 | 1 | -2 |
| 5 | 25.8 | 1 | 21.2 | -12 | 0 | 2 | 1 | -2 |
| 6 | 25.7 | 2 | 21.0 | -5 | 4 | 5 | 3 | -1 |
| 7 | 25.2 | 5 | 20.6 | 4 | 9 | 9 | 5 | -1 |
| 8 | 24.3 | 8 | 19 7 | 14 | 15 | 12 | 7 | 0 |
| 9 | 22.8 | 10 | 18.3 | 21 | 18 | 13 | 8 | -3 |
| 10 | 21.2 | 12 | 17 0 | 24 | 18 | 12 | 3 | -7 |
| 11 | 19.6 | 13 | 15.7 | 23 | 17 | 9 | -1 | -13 |
| 12 | 18 5 | 13 | 14.8 | 23 | 15 | 6 | -6 | -19 |
| 13 | 17.5 | 14 | 14.0 | 22 | 13 | 4 | -9 | -24 |
| 14 | 16.7 | 15 | 13.2 | 21 | 11 | 1 | -13 | -29 |
| 15 | 15.9 | 15 | 12.9 | 19 | 9 | -2 | -17 | -34 |
| 16 | 15.3 | 15 | 12.0 | 18 | 7 | -5 | -20 | -38 |
| 17 | 14.7 | 16 | 11 4 | 17 | 5 | -8 | -25 | ... |
| 18 | 14.0 | 15 | 10.7 | 14 | 2 | -11 | -28 | ... |
| 19 | 13.7 | 8 | 10.4 | 7 | -3 | -14 | -30 | ... |
| 20 | 14.5 | 1 | 10.9 | 2 | -3 | -11 | -25 | ... |
| 21 | 16.6 | -2 | 13 1 | -4 | -3 | -7 | -16 | -27 |
| 22 | 20.1 | -2 | 15 2 | -9 | -2 | -3 | -7 | -15 |
| 23 | 23 2 | -1 | 17.8 | -13 | -3 | -1 | -3 | -8 |
| 24 | 25 1 | -1 | 19 6 | -17 | -4 | 0 | 1 | -5 |

## VK WEST - ASIA

| UTC | MUF | OBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 24.8 | 13 | 18.6 | 7 | 14 | 15 | 12 | 8 |
| 2 | 24.9 | 13 | 20.6 | 8 | 14 | 15 | 13 | 8 |
| 3 | 24.6 | 13 | 20.2 | 9 | 15 | 15 | 13 | 8 |
| 4 | 24.3 | 14 | 19.9 | 12 | 17 | 16 | 13 | 8 |
| 5 | 23.8 | 15 | 19.4 | 15 | 18 | 17 | 13 | 7 |
| 6 | 22.8 | 17 | 18.6 | 21 | 21 | 19 | 14 | 6 |
| 7 | 21.8 | 20 | 18.1 | 29 | 26 | 21 | 14 | 5 |
| 8 | 20.6 | 22 | 16.7 | 31 | 26 | 20 | 12 | 2 |
| 9 | 19.4 | 22 | 15.4 | 31 | 25 | 18 | 8 | -3 |
| 10 | 18.2 | 23 | 14.6 | 30 | 23 | 15 | 5 | -8 |
| 11 | 17.6 | 23 | 14.0 | 30 | 22 | 14 | 2 | -10 |
| 12 | 17.0 | 24 | 13.5 | 29 | 21 | 12 | 0 | -13 |
| 13 | 16.3 | 24 | 13.2 | 28 | 19 | 9 | -4 | -17 |
| 14 | 15.4 | 24 | 12.1 | 27 | 17 | 6 | -8 | -23 |
| 15 | 14.6 | 24 | 11.4 | 25 | 14 | 3 | -12 | -28 |
| 16 | 13.8 | 25 | 10.6 | 23 | 11 | -1 | -17 | -35 |
| 17 | 13.1 | 25 | 10.0 | 22 | 8 | -5 | -22 | ... |
| 18 | 13.6 | 23 | 10.2 | 21 | 9 | -3 | -19 | -37 |
| 19 | 15.4 | 17 | 11.8 | 18 | 12 | 3 | -9 | -23 |
| 20 | 18.8 | 14 | 14.3 | 15 | 15 | 10 | 2 | -7 |
| 21 | 21.7 | 13 | 16.8 | 12 | 15 | 14 | 9 | 2 |
| 22 | 23 3 | 13 | 18.3 | 10 | 15 | 15 | 11 | 5 |
| 23 | 23 8 | 13 | 19 1 | 8 | 14 | 14 | 11 | 6 |
| 24 | 24.5 | 13 | 19.7 | 7 | 14 | 14 | 12 | 7 |

## VK EAST - STH PACIFIC

| UTC | MUF | OBU | FOT | 14 2 | 18.1 | 21 2 | 24 9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 26 4 | -6 | 19 7 | -10 | -7 | -10 | -6 | -7 |
| 2 | 23 8 | -6 | 18 0 | -29 | -12 | -7 | -6 | -8 |
| 3 | 23 6 | -5 | 16 2 | 19 | 7 | -5 | -6 | -11 |
| 4 | 19.5 | -3 | 14.7 | -9 | 3 | -4 | -8 | -16 |
| 5 | 18 2 | 1 | 13 6 | -1 | 1 | -3 | -10 | -20 |
| 6 | 17.1 | 5 | 12 8 | 7 | 3 | -3 | -13 | -26 |
| 7 | 16 3 | 10 | 12 4 | 14 | 6 | -3 | -16 | -31 |
| 8 | 15 6 | 11 | 11 7 | 14 | 9 | -5 | -20 | -36 |
| 9 | 15 0 | 12 | 11.3 | 14 | 3 | -8 | -23 | ... |
| 10 | 13 6 | 13 | 10 4 | 12 | 2 | -15 | -33 | ... |
| 11 | 12 1 | 14 | 9.3 | 7 | -8 | -25 | ... | ... |
| 12 | 12 0 | 14 | 9.3 | 7 | -10 | -26 | ... | ... |
| 13 | 14.9 | 13 | 11.1 | 15 | 3 | -8 | -26 | ... |
| 14 | 19.5 | 12 | 15.0 | 21 | 15 | 9 | -1 | -11 |
| 15 | 17.4 | 7 | 13.5 | 9 | 6 | 1 | -8 | -19 |
| 16 | 38.5 | 2 | 14.2 | -1 | 2 | 1 | -7 | -15 |
| 17 | 17.3 | -6 | 13.2 | -13 | -6 | -6 | -11 | -19 |
| 18 | 17.5 | -13 | 11.3 | -24 | -12 | -10 | -12 | -18 |
| 19 | 20 0 | -12 | 15.7 | -34 | -16 | -11 | -10 | -13 |
| 20 | 24 5 | -9 | 18.7 | .. | -22 | -13 | -8 | -8 |
| 21 | 28 2 | -6 | 21.9 | .. | -26 | -14 | -8 | -6 |
| 22 | 28.6 | -5 | 22.3 | .. | -27 | -15 | -8 | -5 |
| 23 | 28 8 | -6 | 21.9 | .. | -26 | -14 | -8 | -6 |
| 24 | 28 1 | -6 | 21.3 | .. | -22 | -13 | -7 | -6 |

## VK STH - STH PACIFIC

| UTC | MUF | OBU | FOT | 14.2 | 18.1 | 21.2 | 24.9 | 28.5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 26.9 | 5 | 20.3 | ... | -18 | -10 | -6 | -6 |
| 2 | 24.9 | -4 | 18.8 | -30 | -12 | -6 | -4 | -6 |
| 3 | 23.0 | -3 | 17.3 | -19 | -6 | -3 | -4 | -6 |
| 4 | 21.2 | -1 | 15.9 | -9 | -2 | -1 | -5 | -11 |
| 5 | 20.0 | 2 | 15.0 | -1 | 3 | 1 | -5 | -13 |
| 6 | 19.0 | 5 | 14.2 | 7 | 6 | 1 | -7 | -17 |
| 7 | 18.1 | 8 | 13.8 | 13 | 8 | 2 | -9 | -21 |
| 8 | 17.0 | 11 | 12.8 | 16 | 8 | 0 | -13 | -29 |
| 9 | 16.1 | 12 | 12.2 | 16 | 6 | -3 | -17 | -33 |
| 10 | 14.4 | 13 | 11.0 | 13 | 1 | -11 | -28 | ... |
| 11 | 12.6 | 13 | 9 6 | 8 | -7 | -22 | ... | ... |
| 12 | 12 2 | 13 | 9.5 | 7 | -9 | -24 | ... | ... |
| 13 | 15.3 | 13 | 11.4 | 16 | 5 | -6 | -22 | -39 |
| 14 | 17.0 | 11 | 13.3 | 16 | 9 | 1 | -10 | -24 |
| 15 | 16.2 | 4 | 12 5 | 5 | 8 | -4 | -15 | -27 |
| 16 | 15.5 | -5 | 11.8 | 7 | -5 | -9 | -18 | -29 |
| 17 | 15.1 | -15 | 11.4 | -17 | -11 | -12 | -19 | -28 |
| 18 | 16.0 | -19 | 11.9 | -26 | -14 | -13 | -16 | -23 |
| 19 | 18.3 | -17 | 14.4 | -35 | -18 | -13 | -13 | -17 |
| 20 | 22.3 | -13 | 16.7 | ... | -23 | -14 | -11 | -11 |
| 21 | 25.8 | -9 | 19.7 | ... | -26 | -15 | -10 | -8 |
| 22 | 28.0 | -7 | 21.8 | .. | -28 | -16 | -9 | -7 |
| 23 | 28.9 | -6 | 22.8 | .. | -27 | -15 | -8 | -6 |
| 24 | 28 7 | -6 | 21 8 | .. | -24 | -13 | -7 | -6 |

## VK WEST - STH PACIFIC

| UTC | MUF | OBU | FOT | 14.2 | 18.1 | 21 2 | 24.9 | 28 5 |
|---|---|---|---|---|---|---|---|---|
| 1 | 26.3 | -7 | 19.8 | ... | -24 | -14 | -8 | -6 |
| 2 | 23.9 | -8 | 18 0 | .. | -19 | -11 | -7 | -7 |
| 3 | 21 5 | -8 | 16.2 | -34 | -15 | -9 | -7 | -9 |
| 4 | 19.4 | -8 | 14 5 | -23 | -10 | -7 | -8 | -13 |
| 5 | 18.0 | -6 | 13.5 | -15 | -6 | -6 | -9 | -16 |
| 6 | 16 9 | -3 | 12 6 | -8 | -3 | -5 | -11 | -20 |
| 7 | 16.2 | 1 | 12.2 | 0 | 0 | -4 | -13 | -25 |
| 8 | 15.5 | 5 | 11.6 | 6 | 2 | -5 | -16 | -29 |
| 9 | 15.0 | 11 | 11.3 | 12 | 4 | -5 | -19 | -35 |
| 10 | 13 7 | 13 | 10.4 | 12 | 1 | -11 | -28 | . |
| 11 | 12.2 | 14 | 9 3 | 9 | -5 | -20 | -40 | . |
| 12 | 12.1 | 16 | 9.1 | 10 | -5 | -20 | ... | ... |
| 13 | 15.0 | 16 | 11 2 | 18 | 7 | -4 | -19 | -36 |
| 14 | 18 9 | 15 | 15.0 | 22 | 16 | 10 | 1 | -10 |
| 15 | 18 1 | 10 | 14.7 | 12 | 10 | 5 | -3 | -14 |
| 16 | 17.5 | 4 | 13.7 | 2 | 4 | 0 | -7 | -16 |
| 17 | 16.8 | -4 | 13 0 | -9 | -3 | -4 | -10 | -18 |
| 18 | 16.0 | -12 | 12 2 | -18 | -9 | -8 | -13 | -20 |
| 19 | 15.6 | 20 | 11 8 | 26 | -13 | -11 | -14 | -20 |
| 20 | 16.5 | -24 | 12.4 | -34 | -17 | -12 | -13 | -17 |
| 21 | 19.0 | -18 | 15 0 | . | -21 | -14 | -14 | -13 |
| 22 | 23 1 | -12 | 17 5 | . | -27 | -16 | -10 | -9 |
| 23 | 26.7 | -8 | 20 6 | ... | -30 | -17 | -9 | -7 |
| 24 | 28 4 | -6 | 21 5 | .. | -29 | -16 | -9 | -6 |

## VK EAST - USA/CARRIBBEAN

## VK STH - USA/CARRIBBEAN

## VK WEST - USA/CARRIBBEAN

APOGEE ARTS

# HAMADS

## TRADE ADS

● WEATHER FAX programs for IBM XT/ATs. RADFAX2 is a high-resolution shortwave weather fax, Morse & RTTY receiving program. Needs GCA, SSB hf radio & RADFAX decoder. Also RF2HERC, RF2EGA & RF2VGA, same as RADFAX2 but suitable for Hercules, EGA & VGA cards respectively $35. SATFAX is a NOAA, meteor & GMS weather satellite picture-receiving program. Uses EGA or VGA modes. Needs EGA or VGA colour monitor and card, plus WEATHER FAX PC card. $45. All programs are on 5.25" or 3.5" disks (state which) & documentation add $3 postage. ONLY from M Delahunty, 42 Villiers St, New Farm, Qld, 4005. Ph (07) 358 2785.

● AMIDON ferromagnetic cores, for all transmitter and receiver applications. Send OL size SASE for data/price to: RJ & US Imports, Box 157, Mortdale, NSW, 2223. (No enquiries at office, please — 11 Macken St, Oatley). Agencies at: Geoff Wood Electronics, Sydney; Webb Electronics, Albury; Assoc TV Service, Hobart; Electronic Components, ACT; Truscott's Electronics, Melb.

● AUSTRALIAN mapping grid program. Convert your eastings and northings to latitude and longitude. For Melbourne, your Melway 1990 edition 20 shows fine red dotted lines for you, mostly in AMG Zone 55. For Brisbane, your UBD 32nd edition, and for Sydney your UBD 16th edition, shows red marks around the periphery of each map that need pencilling in to get your grid lines, but northings and eastings slop on page for you in AMG Zone 56. The program is on 5.25" or 3.5" disk (state which) postage included for $35. From Alan Judson, PO Box 469, Woolloongabba, Qld, 4102.

## FOR SALE - ACT

● YAESU FT747GX HF transceiver plus mobile bracket, $900. Glen VK1GL. Ph (06) 254 6002 QTHR.

● TR-2500 Kenwood 2m HH, complete with spkr/mic, batt chgr, mobile cradle/chgr, soft carry case, spare batt. NICADS a bit tired. $275 ono. Paul. Ph (06) 288 7953 AH.

## FOR SALE - NSW

● ELECTRONICS Australia mags, Aug'84 to Nov'86. $25 lot. Amateur Radio Action mags, vol 12/11 to vol 12/11, $25. Lot vol 10/11 missing. W. Lesze, 40 Wimbourne Rd, Mulgoa, NSW.

● KENWOOD TS430S fitted with all options (CW, AM, narrow filters, FM unit) gen coverage RX, GC. $1400 ono. Ph (02) 971 9795 VK2HL.

● FT290 2m all mode 2.5W $500. FT730 70cm FM 10W $400. Both as new in boxes with scan mikes. VK2JZ. Ph (02) 488 7946.

● VZ300 comp data cass plug packs, as new, inst book try RTTY modem ready to go. Lot $140 QTHR VK2GE Max (065) 85 5732.

● YAESU FL2050 2m linear amp, incl rec pre-amp, as new cond, still boxed oct $220. VK2GE QTHR. Ph (065) 85 5732.

● Kenwood R1000 serial no 0051184 communications rx 200kHz to 30MHz, digital readout, VGC, complete with owner and service manuals. $450 ono. Ph (02) 417 1129 or (02) 417 1628. VK2CWF QTHR.

● LAFAYETTE amateur band only receiver model HA-350 $100 ONO. Ph (02) 623 3606 VK2PBM QTHR.

● 1990 RADIO Amateur Callbook, international listings and North American listings, in GC, both volumes, $55 incl postage. Steve VK2PS. Ph (02) 654 1809.

● DECEASED ESTATE. Syd Sim VK2AVG. Garage sale 16/17 Feb. 6 x HF rigs, 6 x 2m rigs, WWII collector items, tools, misc elect items, TV sets, aerials etc. 42 Bindea St, Como, NSW, 2226. Ph (02) 528 9835.

## FOR SALE - VIC

● ICOM IC502 6M SSB in mint cond, handbook & original box, $145. STC commercial base station converted to6M FM, with 52.525MHz simp & repeater VK3RMS (53.9MHz) 50W with remote cont & mic etc. Comp & going $100 ono. Marconi sig gen 10-300MHz, calib atten to 1uv pd. With circuit and spare RL18 osc tubes, $120 ono. Ian VK3AYK. Ph (03) 523 9405 AH.

● YAESU FT101ZD in VGC with DC-DC converter fan, manual, $700. Yaesu FT707 in GC with narrow CW filter, manual & carton, $650. Damian VK3EHP QTHR. Ph (053) 52 4183.

● NALLY Tower 17m, free standing, wind-up, tilt over. C/W Hyam TH6-DXX HF beam and Emotator 502CXX, heavy duty rotator. Allen PC. Replacement $2800, sell $1700. Ken, VK3MW. Ph (03) 560 5278 QTHR.

● CRYSTAL 18MHz for 147.425MHz TX, suit Icom 215, $8. Also Azden PCS3000 with remote cable, $320. VK3YNB QTHR. (053) 31 3829.

● C42 FM Transceiver ex-army, complete with power distribution box and all external cables, mic and h/phones. Best offer plus manuals. VK3ERG. Ph (03) 541 5458 BH.

● REALISTIC HXT100 10m SSB/CW transceiver, only 4 months young with 5ft ZCG mobile whip, $400. Derek VK3DD, Yarra Glen. Ph (03) 730 1557.

● 6-METRE station complete, Icom IC502, IC5OL linear, TET Swiss Quad ant, all good order, complete with handbooks, $250 the lot. Ph (03) 557 5475 Mike VK3KTO QTHR.

● ICOM IC701 S/N 5365, FC, as is, $300. Icom IC22A S/N 3338, FC, as is, $100. Ernie VK3CEW. Ph (03) 467 1503 (home) or (03) 520 0854 (work).

● KENWOOD TS520 transceiver, AC/DC mic and handbook, impeccable cond, any test welcome, $395, buyer collect. Alan VK3AMT Ph (03) 789 9106.

● OSCILLOSCOPE GWD 5098 5" DC to 7MHz, wkg order w/ handbook, GC, $100. Rotator "Tama", suit UHF/VHF or light HF W/240AC control unit, new, unused, $100. Command Xmitter 5.3-7MHz w/matching 240AC power supply, GC, $35. VK3SZ QTHR. Ph (03) 560 4305.

● YAESU FT208 handheld, EC, inc batt and mic, $225. Realistic PRO31 fully programmable scanner, as new with box and manual, $225. Ph (03) 782 1115, Norm VK3ZEP.

● EIGHT CHLORIDE positive plate 6V 90amp/hour lead acid cell batteries, $150 ea. Two Power Sonic gel cell, sealed, recharge 12V 50Amp/hr batteries (new), $200 ea. One Power Sonic gel cell sealed rechargeable 12V 40Amp/hr battery (new, $180. Thirty-four General Electric NICAD D-cell batteries, 1.2V 4Amp/hour (new), $10 ea. Two 48V DC 2A regulated power supply, $60 ea. Two 24V DX 1.3A regulated power supply, $40 ea. Evan VK3EJV. Ph (03) 438 2878 AH.

● TX tubes 4-125 new Icom IC202 SSB xcvr tubes, $100 pr. XCVR $120 VK3IZ QTR Ph (03) 718 2293.

● ROTATOR ham IV heavy duty electronic wedge brake, brand spanking new, $690. Ted VK3TG. (052) 59 3225.

● TRIBAND full sized Telrex beam, top performer, $325. Ted VK3TG. (052) 59 3225.

● AT MOTHERBOARD w/1Mb RAM 4.77/10MHz. $150. Case w/ 150W pwr supply, room for 2 full-height drives, $130. 2 x 360K Mitsubishi FDDs, $80 ea. XT keyboard, $50. TI-74 BASICALC — handheld basic computer with scientific calculator, 16k RAM, Mathpac ROM cartridge, all manuals, as new, $200. Non-operational CGA monitor, $30. Peter VK3DXD. Ph (03) 725 1145 QTHR.

## FOR SALE - QLD

● YAESU FT7 rcvr ser 8K110843, incl mic, handbook, VG $320. Yaesu FL110 linear amp, ser 9H070191 with handbook, VG, $150. Commodore C64, ser UKB127445 with Dataset, GC, $100. Realistic AM/FM stereo rcvr STA350, VG, $100. Palec mod osc, ser 5158, 150kHz-30MHz, VG, $60. VK Powermate 13.8V, 10 amps, home brew, $40. VK4CK QTHR. Ph (07) 371 2135.

● FULL SET Kenwood mobile whips and base, $75. Hygain TH3MK3, needs minor repairs, $150 ono. Jim VK4AJS. Ph (079) 28 2843 AH.

## FOR SALE - STH AUST

● YAESU FT690R 6M all mode transceiver, as new cond, in original box. Plus 6M home-brew beam antenna, $480. Bruce VK5ZTO. Ph (08) 292 0569 BH, (08) 339 4955 AH.

● PANASONIC DR49 communications receiver manuals, $400. MSC33 tri-band beam, $200. ARLEC power pack PS 501, 3/6/9/12V, 1AMP, $50. VK5NWL, QTHR. (08) 255 6976.

## FOR SALE - TAS

IC251A 2m all mode, $850. IC28A 2m FM, $450. TR9500 70cm, all mode, $750. Dick Smith 70cm 50W linear, $200. TR9000 2m, all mode, $500. Richard VK7RO. Ph (002) 27 8974.

## WANTED - NSW

● YAESU 290R 2m rig or similar. VK2EJU. Ph (065) 53 1365.

● UNSERVICEABLE AVO meter, model eight MK3 or movement or moving coil, also top quality valve tester. Will pay good prices. Ph (068) 81 8906, 8 Gosse Ave, Dubbo East, 2830.

● CIRCUIT diagram for Palec sig gen model SG1 plus manual or photocopy. Cost reimbursement. Jim VK2GJW QTHR. Ph (066) 77 9370.

## WANTED - VIC

● YAESU FT501 transceiver must be in EC. Will pay good price. Rob VK3JE. Ph (060) 37 1262 or (03) 584 5737.

● TRANSMITTING valves type 810, details to Ian VK3AYK. Ph (03) 523 9405 AH, (03) 428 4732 BUS.

● AWA VHF car phone, type 3J59431 replacement valves and spare parts required. 6BH6, 6AK5, 6AK6, 12AT7, ECH81, 6C4 and OQF03/12. Vincent VK3AJO. Ph (03) 872 3503 QTHR.

● INDUCTANCE & capacitance slide rule scales. Also solar cells similar to those in solar-powered calculators. VK3YNB QTHR. Ph (053) 31 3829.

● DC current probe similar to Tektronix A6302 for digital storage CRO. Must not break into circuit. VK3DE QTHR.

● YAESU FTV250 with manual, GC. Bob VK3EFD QTHR. Ph (03) 374 2416.

● FT101E in good working order. John VK3NJX QTHR. Ph (057) 95 2364.

● CIRCUIT diagram service data for National Radio USA, NC-105 receiver reviewed QST April 1962. All costs reimbursed. Ken VK3ZFI QTHR. Ph (03) 580 5347.

● COLLINS KMW2 or KWM2A transceiver in EC. Will pay good price. Rob VK3JE. Ph (060) 37 1262.

● VARIAC or similar, 150 watts or any bench-type unit. Ron VK3BRC QTHR. Ph (03) 819 3568.

● BC348 or BC312 rcvr. Must be in GC or unmodified. Good price paid. VK3IZ QTHR. Ph (03) 718 2293.

### WANTED - QLD

● CRO module for Singer Gertsch S16. Gen. Rod Tow. Ph (075) 63 1308, 5 Hooper St, Boonah, 4310.

● MILITARY radio collector/restorer badly needs cables for C11/R210 W5, case for 128W5, tubes, 6AJ5, 6062, 6AK6, 6BJ6, 6BH6, CV2347, 5B258M regulator 3TFT, VK4EF, 97 Jubilee Tce, Bardon, 4065. Ph (07) 366 1603 AH please.

● WANTED BY WWII signaller British Army valves AR3 AT26, AT50, USA valve 2DF4 for PRC 25 WS, component list Aust Army 128 WS, book for RAAF AR17 receiver. Appreciate any help VK4EF. 97 Jubilee Tce, Bardon, 4065. Ph (07) 366 1603 AH.

### WANTED - STH AUST

TEN-TEC CENTURY 21 txcvr, Heathkit HW8 txcvr, 16 quad spreaders, budget priced antenna rotator, 75ohm twin lead, 300ohm ladder line VK5HP. Doc. Ph (088) 49 1956.

### WANTED - WESTERN AUSTRALIA

● WANTED please, CW filter for FT707. VK6HC, QTHR. Ph (09) 293 2658.

● INTRUDER WATCH OBSERVERS in VK6. Free tape, logs, postage & advice. Please help. Contact Graham VK6RO, QTHR. Ph (09) 451 3581.

● ANYONE using coherent operating system a unix workalike please contact Jon VK6TU QTHR, possibly form club. Ph (09) 349 9342.

### WANTED - TAS

● YAESU FT625R/RD or K'wood TS600 6m txrc. Must be in GC. Damien VK7CDI. Ph (003) 96 4153.

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# HAMADS

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*Please enclose a self addressed stamped envelope if an acknowledgement is required that the Hamad has been received.
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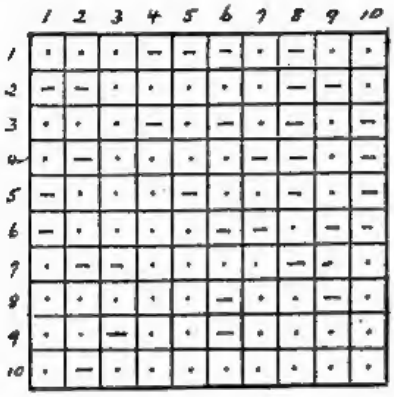
**Not for Publication:** ❑ Miscellaneous ❑ For Sale ❑ Wanted

Name:.....Call Sign:.....Address:.....

# Solution to Morseword No 47



Across: 1 sore; 2 zip; 3 start; 4 leak; 5 daft; 6 bay; 7 wife; 8 suer; 9 errs; 10 lies

Down: 1 rates; 2 arena; 3 hike; 5 dais; 6 king; 7 vase; 8 Moree; 9 real; 10 ions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# ADVERTISERS INDEX



# HOW TO JOIN THE WIA

Fill out the following form and send to:

The Membership Secretary
Wireless Institute of Australia
PO Box 300
Caulfield South, Vic 3162

I wish to obtain further information about the WIA.

Mr, Mrs, Miss, Ms: .....

.....

Call Sign (if applicable): .....

Address: .....

.....

.....

State and Postcode: .....

# WIA SLOW MORSE TRANSMISSIONS

| | |
|---|---|
| VK2BWI | Nightly at 2000 local on 3550 kHz |
| VK2RCW | Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8wpm, 12 wpm |
| VK3RCW | Continuous on 144.950 MHz 5 wpm, 10 wpm |
| VK4WIT | Monday at 0930 UTC on 3535 kHz |
| VK4WIL | Tuesday at 0930 UTC on 3535 kHz (0830 UTC during summertime) |
| VK4WCH | Wednesday at 0930 UTC on 3535kHz (0830 UTC during summertime) |
| VK4WIS | Nightly at 0900 UTC on 3542 kHz (0830 UTC during summertime) |
| VK5AWI | Nightly at 1030 UTC on 3550 kHz |
| VK6RAP | Nightly at 2000 local on 146.700 MHz |
| VK6WIA | Nightly (except Saturday) at 1200 UTC on 3.555 MHz |


# Icom HF Transceivers meet the demands of Amateurs

As an Amateur operator, you know what you want in an HF rig. In fact, although Icom are THE professionals when it comes to communications, it is the Amateurs from whom we seek guidance when designing and developing superior equipment. That's why Icom leads the way in Amateur Communications. If space here permitted, we could go into lengthy discourse about Icom's outstanding features and options, but you're probably aware of most of them. Just to prompt your memory, here's a brief summary of our HF Range –

## IC-726 Sophisticated, Compact, with built-in 6 metre band

All the features and reliability you've come to expect from Icom in an advanced, Multimode Transceiver – and still at a budget price! Designed with the beginner in mind, the IC-726 is easy to operate but has so many features it satisfies the needs of veterans too. This little beauty receives and transmits on LSB, USB, CW, AM and FM modes just as simply from home, as in a vehicle or the field. Enjoy great mobiling potential with our optional HF automatic antenna tuner.

## IC-735 a highly advanced compact

An ultra-compact, 100W unit, the IC-735 is well suited for car, boat or aeroplane on 12 V operation as well as a base station set-up. You'll cover all HF Amateur bands from 1.8 MHz to 28MHz including 10, 18 and 24 MHz with the IC-735 using features like Notch filter, Past band tuning, SWR bridge, and a Variable noise blanker. Ring Icom for a leaflet on this ham band, high performer which doubles as a superb general coverage receiver. Call us now for a colour brochure or the name of your nearest stockist.

## IC-765 for the DX enthusiast talking to the world –

Icom have incorporated your most requested features to enable you to expand your HF world with the super-advanced IC-765. Equipped with our exclusive DDS (Direct Digital Synthesizer) System, it boasts a fully automatic, high-speed antenna tuner, built-in power supply and features appealing to CW enthusiasts – a built electronic keyer with iambic operation capability for example (paddle not included).
If you'd like to read more about the IC-765's Band Stacking Registers, 99 Fully Tunable Memories and Full QSK Break-in.

## IC-725 Compact – Fixed, mobile or portable

Easily operated, the IC-725 is a compact HF transceiver that really delivers extraordinary performance. This 12V powered, full-featured unit has a general coverage receiver as well that won't let you down when it comes to globe-listening operation.
Enjoy great mobiling potential with our optional HF automatic antenna tuner – enquire when you call for a brochure or the name of your nearest stockist. (amateurs are the professionals in the business of communications).

## For further information call Icom free on 008 338 915

Melbourne callers (03) 529 7582 Icom Australia Pty. Ltd., 7 Duke Street, Windsor 3181.
Icom Australia's warranty is only applicable to products purchased from their authorised Australian Dealers.

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Please rush to me your brochure on the ☐ IC-725 ☐ IC-726 ☐ IC-735 ☐ IC-765 and the name of my nearest Icom stockist.
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